

# *Air Force* CIVIL ENGINEER

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Aviano *Today*



Maj Gen Earnest O. Robbins II

Photo by Keith Fried



## 2002: Looking Back...and Forward

It's that time of year again, when each of us should pause and take account of the last 12 months and look forward to the challenges of the coming year. When I do so, I can't help but feel extremely proud and even awed by the magnitude and significance of all the things we're responsible for and the results of our efforts at every level. From our role in the ongoing war on terror to the progress we continue to make in preparing our installations to support our transforming air and space force, each of you, in some form or other, have placed service before self. That sense of purpose and sacrifice guarantees success.

We began 2002 in an air of uncertainty. The war on terror was just underway. We were defining our role in it and the effect the events of Sept. 11, 2001, would have on the way we do business. Over the course of the year, thousands of you left your families to support forward operations while thousands more undertook round-the-clock operations necessary to prosecute the war from home station. Based upon my personal observations, and from reports I've received from commanders to congressmen, you have hit nothing but home runs. Our ability to quickly establish and operate contingency air bases and support combatant commanders ensured that Air Force civil engineers remain the "engineers of choice" when the chips are down.

At home, we managed the largest infrastructure investment program the Air Force has seen in more than a decade. In 2002, we invested well over \$4 billion in military construction, family housing, and facility sustainment, restoration and modernization. I credit our tremendous teamwork, starting at the installations and running through the major commands and Air Staff. The task of developing, defending and executing a program of this magnitude is not easy to comprehend in terms of complexity and, at times, frustration at every level. Suffice it to say, you've helped move Air Force installation infrastructure well down the road to recovery. Our challenge now is to stay this course.

The year 2003 promises to be as challenging as 2002. Of foremost concern is the looming threat posed by Iraq. Without question, we'll play a central role in any potential combat operations. Our continual efforts to operate and maintain our existing, aged infrastructure through the application of traditional and innovative practices will remain at the forefront. At the same time, we'll have to stay on top of the multitude of issues related to transforming our Air Force to satisfy the vision of senior leaders in the Administration and Congress. From new mission beddowns to planning for a 2005 round of base realignment and closure, the future is full of challenges.

You are the backbone of the most respected air and space force in the world. Thank you, again, for all you do. I wish each and every one of you ... officers, NCOs, airmen, civilians and contractors ... a safe and prosperous New Year.

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Maj Gen Earnest O. Robbins II

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# Aviano *Today*

*International cooperation, NATO money and USAF jets continue to transform the Italian fighter base into a choice assignment*

by Jim Weslowski  
16th AF/PMO Public Affairs



Aviano's Flightline entry gate, visitors' center and gatehouse cost \$1.2 million and was opened for daily use April 18, 2002. (Photo by SrA Lakisha Croley)

The U.S. Air Force's largest current construction program, a 10-year, \$540 million, 286 project, infrastructure upgrade of Aviano Air Base, Italy, continues to amaze those stationed here and visitors alike.

Named Aviano 2000, the list of completed projects is now starting to match the number of projects under construction, with 10 more projects programmed for completion in spring 2003. A new 250,000 square foot, \$35 million K-12 grade school, now the largest facility at Aviano, opened its doors to students in September 2002 and joined the list of completed projects. A new \$3.5 million runway lighting system coupled with a \$2.7 million resurfacing of the 23-End runway project, with a compressed 45-day construction period, saw completion in November 2002. The \$4.1 million, 31,000 square foot Fitness Center joined the list of completed projects with an official ribbon cutting ceremony in January of this year. A 20-bed hospital with renovated clinics costing more than \$27.6 million is underway and planned for completion in early 2004. This is only a sampling of the base's transformation under the guidance of Det. 3, 16th Air Force Program Management Office and the leader-

ship of its U.S. Air Force program manager, Col Gary LaGassey.

In early 1999, the U.S. Air Force established the Aviano 2000 Program Management Office to integrate construction. The monumental task was to deliver to this northeastern Italian base an upgrade package to support the 31st Fighter Wing with its 42 F-16 fighters, a military and civilian work force of more than 4,500 and approximately 4,000 family members.

One can see a very positive trend forming when looking over the base today with completed buildings being delivered to the 31st FW from multiple sources; four Italian Air Force projects are under construction with nine others out for bids, the U.S. Navy Resident Officer in Charge of Construction (ROICC) has closed out nine NATO projects and has 22 others under construction and the Military Construction program list has one completed project with 12 others on schedule. Everyone now assigned to Aviano is touched by at least one completed Aviano 2000 construction project. This is the good news, and it gets better.

But this wasn't the case a few years ago.



In April 1994, as a result of an October 1993 decision by NATO, the U.S. Air Force relocated the 31st FW to Aviano. This move doubled the military population from 1,600 to 3,500 at a base that was originally sized for about 1,300 in the mid 1950s. The base never had a permanent flying unit assigned; now it's home to 42 F-16s. During the Cold War, it was a base destined to receive reinforcing squadrons in the event of a World War III scenario.

"Base facilities had not been improved much over the years because the largest threat to NATO came from Soviet and Warsaw Pact forces arrayed across central Eastern Europe," said Colonel LaGassey. "As a result, NATO's infrastructure investment in the Mediterranean Region fell far behind the Central Region. Its facilities were undersized and inadequate for this new mission."

As the U.S. Air Force prepared to move the wing to Aviano, it was clear major infrastructure investments would be needed to allow its most modern combat aircraft to operate. Planners at the Pentagon and at Headquarters U.S. Air Forces in Europe identified and

programmed \$52 million worth of emergency funds to offset the worst problems in fiscal years 1994 and 1995, while at the same time pursuing NATO funding.

NATO's Security Investment Program approved \$350 million for 90 of the largest projects in a "Capabilities Package" aimed at supporting the fighter beddown. The U.S. contributed another \$265 million to fund facilities, equipment and cost-shares. By mid-1996 emergency construction was underway with architect and engineering firms working around the clock to turn out several large project designs under the guidance of the 31st Civil Engineer Squadron.

"Land for development was at a premium, but in May 1996 the Italian Air Force ceded an additional 210 acres for U.S. use adjacent to the 950-acre main airstrip," said Colonel LaGassey. "Even with the additional land, Aviano is considered small by U.S. Air Force standards."

The Aviano 2000 program, as laid out by initial planners, was a half-billion dollar base expansion. It is a mixture of operational and community support facilities with projects ranging in size and complexity from simple renovations to ground-up construction of major new buildings. It also includes a complete utility infrastructure and communications backbone to support the entire complex.

"Strong leadership by HQ USAFE planners and programmers, the Aviano base civil engineer and senior commanders throughout the system drove many early successes in the program," said Colonel LaGassey. "But by early 1997, the fighter wing's ability to prepare for its primary mission of air combat was being diluted by the amount of time and energy its senior leaders had to spend on Aviano 2000."

Further hindering construction efforts, the wing had to prepare for air combat operations in the Balkans and later for the 79-day Kosovo air campaign. In both instances, more than 200 coalition aircraft flew around-the-clock air combat operations.

"In December 1998, Lt Gen Mike Short, the U.S. and NATO air forces commander in NATO's Southern Region, stepped in," said Colonel LaGassey. "His vision was to have a single, full-time, program office build the base for its customer, the 31st FW, freeing up the wing commander and his team to concentrate on the flying mission."

The Aviano 2000 Program Management Office started to take shape in February 1999 and was formally authorized on July 1, 1999. The task was daunting. Ninety-seven large NATO construction projects, with 64 on the U.S. execution side and 33 on the Italian side, 20 military construction projects and two community base projects all required immediate attention.

"Success in the early years was everything but textbook application of project management principles and techniques," said Colonel LaGassey. "Project managers and support teams had to be developed fast to stem



**Aviano's \$15 million Base Exchange and Commissary complex, food court and multiple service shops, all under one roof, opened for business in September 2000. The crane in the background is being used by the contractor building the new post office. (Photo by SrA Lakisha Croley)**

the tide of the out-of-control program that started five years earlier. We had to sort out core tasks, establish basic project controls, develop program and project tools and build effective project delivery teams.”

The initial results of all the hard work were impressive. Between February and July 1999, the program office and individual project delivery teams were organized, runaway projects were tamed, a basic project management methodology was instituted and the wing was able to continue its air combat operations.

“Catching up with a program that had been underway for five years was much more difficult than anyone could have imagined,” said Colonel LaGassey. “We had some early success, like the restoration of the runway in 32 days in August-September 1999, which was necessitated by operational considerations and the possibility of the Balkans follow-on air campaign. We also had a number of failures; for example, unacceptable delays caused by nonperforming contractors. Many of those might have been resolved earlier had a program management office been established from the start.”

“The 31st CES Engineering Flight was understaffed to manage such a huge program,” said Lt Col Timothy Green, 31st CES commander. “It was a good move by senior leaders to form the PMO. It enabled the CE squadron to concentrate on supporting the 31st FW mission, executing the normal Operation and

Maintenance-funded construction program and perhaps most importantly, becoming the overall customer/requirements generator for the PMO. As new buildings are turned over to the wing, there are numerous utility and maintenance issues that become the responsibility of the CE squadron.”

“Air Force engineering uses a standardized configuration management approach. Unfortunately we found it had been applied only minimally during the early years of Aviano 2000,” said Lt Col Ken Polasek, Det. 3, 16th AF PMO deputy program manager. “Our initial assessment showed the program had uncontrolled change across more than 30 major projects. Change management had to be improved quickly.”

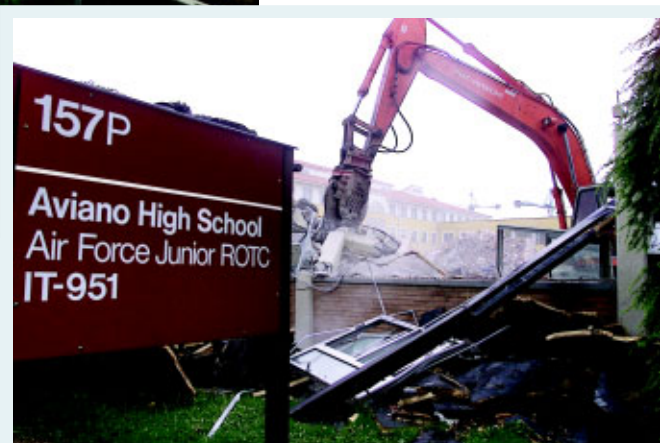
“One of the first management decisions was to form a Configuration Control Board to apply basic change control procedures. The process was tailored to fit Aviano 2000 needs and put decision-making authority at the proper working levels,” said Colonel Polasek. “Installation of a three-tier decision threshold process gave authority to project managers for day-to-day decisions and established an Executive Steering Group to approve critical configuration changes that have high-impact cost and schedule challenges.”

“I view the ESG process participants as an ‘Iron Triangle,’” said Colonel Green. “At each level PMO, ROICC and CES personnel work to resolve the inevitable

challenges associated with construction. The majority of the issues are resolved at the lowest level between the PMO and ROICC project managers, and CES engineering and operations personnel. The final tier, the ESG itself, is where the senior members of each organization meet weekly to make decisions on high impact issues. This partnership and process has kept Aviano 2000 projects moving forward with the best options for success. Together our teams



The newest Department of Defense Dependent School K-12 opened at Aviano for the first day of school Sept. 3, 2002. The 250,000 square foot facility took more than 70 architects and engineers to design. Because of Aviano's limited area, buildings in the footprint area were being used and demolished as construction continued into the final weeks. The ROTC building made way for the sports field just days prior to the school's grand opening. (Photo by TSgt Mitchell Fuqua)





review project plans, change options and agree on courses of action to keep the program going.”

As the PMO was forming and taking shape it was clear that project scheduling needed to be tracked more closely. Many projects had impacted each other simply by being in the same location or interconnected into proposed utilities. Construction on one project could not start until demolition of another was completed or a building could not be occupied unless a utilities upgrade project was completed. Not everyone knew in a timely manner about delays and changes in other projects that could have an impact on their project. A big snapshot of all unfinished projects was needed so project managers could view timelines of all construction projects and better manage their schedules.

Doran Consulting, L.L.C., was hired in 1999 to design a master schedule of 97 major projects. The Virginia Beach, VA, firm designed the schedule and keeps one technician at the PMO to continually update the project database. Project managers are able to track timelines of their projects and view schedules of other projects that may have an impact on their projects’ completion schedules. As an added benefit, the scheduler also posts long-term budget requirements for the entire life of the projects.

“We describe the process as Domino Management,” said Colonel Green. “If buildings and new construction space are not available when originally planned, it sets a domino effect of costs and new problems into action. Every project has a series of domino events before and after it, which directly impacts the program. The simple becomes complex when dealing with 285 projects. In its simplest form, Building A must be completed before you can empty Building B to demolish it and construct Building C. In fact, space is at such a premium that 27 percent of our square footage is in off-base leases.”

“Unplanned changes bring unprogrammed costs for these temporary buildings, utilities and moves. For example, the new Radar Approach Control facility is nearing completion but construction to the new control tower has not started. It was originally planned to complete the two buildings simultaneously and integrate the equipment. The dominoes from these delays are cost, equipment and material increases. The current control tower is located in a different area and we will now have to budget thousands of dollars for temporary cabling and interfaces in order to get RAPCON moved so we can have their old facility for another project,” said Colonel Green.

As the number of Aviano 2000 projects grew so did the need for construction agents. There are four agents performing construction management services for the Air Force and NATO at Aviano: the Italian Air Force, the Naval Facilities Engineering Command, the Army Corps of Engineers and the Air Force’s Base Civil Engineer organization.

Lt Roberto Tomaiuolo of the Italian Air Force recently assumed command of the 110th Direzione Ordinaria Lavori Demanio at Aviano. Having four major construction projects underway, nine in the bidding/advertised phase and eight more in the design process, keeps the Italian project commander and his staff very busy. Three other mission-related projects have already been completed. Currently he has a staff of eight and is hoping by next year to increase to 15 to help handle the large workload ahead.

“These are operational types of facilities with a lot of technical requirements. They take a long time to complete,” said Lieutenant Tomaiuolo. “We are building more than empty buildings. There are special requirements for utilities and high-tech equipment that will be installed. We have a lot of experience in building operational facilities, and this is why we are the construction agent on these NATO mission projects.”

A large vehicle maintenance facility, avionics facility, ground fuels and hot pit refueling projects are underway. “Two of these projects are renovations to existing facilities where we are spending a lot of time and money correcting unforeseen problems to the old building and making sure it will meet the NATO mission needs,” added Lieutenant Tomaiuolo.

“There are some differences between us and the U.S. in the way we manage contracts. It is rare for us to have cost overruns,” said Lieutenant Tomaiuolo. “Contractors are given bid caps and must operate by law within that amount. But I do like some aspects of the U.S. bid process. Maybe someday we will see a mix of the two processes.”

The U.S. Navy Resident Officer in Charge of Construction has been the largest construction agent for Aviano 2000. The team of 20 engineers led by Cmdr David Kelley and Mike Bellamy, P.E., the ROICC chief engineer has closed out nine NATO projects and has 22 others under construction.

“Obviously with a construction program of this magnitude there will be many challenges and obstacles that need to be dealt with to keep the design and construction process moving forward,” said Mr. Bellamy. “The melding of U.S. and Italian building codes along



**Children attend the Department of Defense Dependents School at Aviano during the official grand opening/ribbon cutting ceremony, Sept. 26, 2002.  
(Photo by TSgt Mitchell Fuqua)**



**Lt. Mark Doran, U.S. Navy Resident Officer in Charge Construction, inspects the "igloo" system used in the new fitness center's construction. Aviano's new construction uses the igloos or similar methods in the foundations to mitigate the possibility of radon gases entering the facilities. (Photo by SSgt Edward Braly)**

with contractors becoming more familiar with the U.S. Navy's contracting and administration methods have been our most significant challenges, but we have had to make adjustments as well to allow the strength of the Italian construction community to flourish."

"Over time, there has emerged a consistent pool of contractors bidding on our projects. These contractors know our contracting process and execute our quality expectations in the field," said Mr. Bellamy.

Looking at the operating environment of the base, one quickly finds several external factors influencing the Aviano 2000 program. On the Italian side we see defense officials, regional and provincial administrators, and a group of 11 local mayors who are impacted by the presence of the base in their communities. To fully appreciate the complexity of their interests, one must know that Italy currently has more than 20 political parties at the national level, and each is represented at regional, provincial and local levels. Also, Italian safety, security and environmental laws have increased in recent years due largely to Italy's strong commitment to the European Union and strong activism by citizens.

Labor issues, contractor bidding and pricing difficulties led the list of management's concerns in construction. The shortages of manpower in Italy's Northeastern region have become a way of life. Current Italian demographics show zero growth rates, a move away from manual labor due to higher levels of education and increased labor costs.

Another bureaucratic, potentially political and cultural aspect of this environment is how contractors are selected using International Competitive Bidding and National Competitive Bidding procedures. For NATO's \$350 million investment, ICB is used. This has its own set of practical, bureaucratic and political challenges.

**Maurizio Zorat, U.S. Navy Resident Officer in Charge Construction contractor representative and Scott Mulholland, Det. 3, 16th Air Force PMO project manager look over the condition of the landscape of the first of four new dorms delivered in mid-2002. (Photo by SrA Lakisha Croley)**



**Visiting the new fitness center construction site in mid-October 2002 are (left to right) Tom Woosley, Det. 3, 16th Air Force Program Management Office project manager; Alessandro Fontana, U.S. Navy Resident Officer in Charge Construction inspector; Lt Col Ken Polasek, Det. 3, 16th Air Force PMO deputy program manager; and Lt. Mark Doran, U.S. Navy ROICC. The fitness center is scheduled to open in late February. (Photo by SrA Lakisha Croley)**

"We face many challenges during initial contract pricing with the NATO ICB process (similar to the sealed bid, firm fixed price method), bid preparation timelines to native language differences with regard to contract specifications and other cultural differences," said Colonel Polasek. "With many international players the project and funding approval processes are heavily weighed in bureaucracy. Because the projects are being built on an Italian Air Base, Italy is a full NATO participant at every step. These approval processes are lengthy but the relationships are important."

The Italian Defense General Staff reviews each project to ensure it meets approved NATO and U.S. requirements within Italy. Once IDGS receives the project requests, the Italian military headquarters staff them through defense officials and regional civilian authorities. At various points the U.S. Air Force is called in to explain economic, environmental and cultural impacts. This system frequently becomes complicated as special interest groups raise concerns.





In the conceptual stage, each project must be approved by Italy, NATO and the U.S. for scope of military operations authorized within Italy, approved program scope authorized by NATO Ministers and U.S. forces structure planning. After approval, changes are difficult and must be justified.

“When scope and costs change for NATO funded projects, I try to visit the base to understand why,” said Russ Evoy, International Staff adviser to the NATO Infrastructure Committee. “Before I can recommend a course of action for the committee, I must understand exactly what has changed from the original authorized scope — why is there a need for more money, more equipment or a larger facility? If the users can’t explain these changes and convince me, then I can’t convince the NATO committee. In the past, the Aviano 2000 team has always given excellent support to help me pursue my questions and concerns and we have succeeded in getting

“Our program management approach allows for flexibility and change when needed. This is evident as year three of the PMO closed out with steady gains toward project completions. As we move into the final years of the program we are still able to make changes in areas to meet the needs of a maturing program,” said Colonel LaGassey.

“Success in construction is traditionally measured by assessing the scope, schedule and cost triangle. We’ve accepted those elements, but have added two others — quality and safety — that will stay with us now and until all Aviano’s construction is completed,” said Colonel Polasek. “We refer to our five-sided assessment model as ‘The Pentagon of Success.’ Assessment of these five elements — scope, schedule, cost, quality and safety — is imbedded at every level of our daily operations and in every project and program review. We now have a full-time Italian safety specialist, Lorenzo Bertulazzi, on the

payroll who helps the U.S. and the contractor sides stay aware of our safety requirements. Our project managers and senior staff recognize the importance of all these elements and how they combine to deliver a safe and quality project to the customer.”

“Aviano 2000 is fundamentally a construction program,” said Colonel Polasek. “But, our PMO has another added twist. Our responsibilities also include the ‘Smooth Move’ process. Each facility must be fully furnished and equipped for customer use within 30-60 days following construction completion. This is our turnkey charter. By 2006, Smooth Move costs will total more than \$40 million across more

than 70 brand new and renovated facilities. Our task is definition and refinement of customer requirements, interior design, planning and scheduling, acquisition, installation and quality control.”

“It takes a considerable effort to keep an international construction project of this size on track,” said Colonel LaGassey. “Situational awareness must be your *modus operandi*. Without implementing a project management office with a clear understanding of the mission, objectives and tasks, we could not have succeeded this far. We are turning ‘Sleepy Hollow’ into a choice assignment, with our aim at project maturity in 2007.”



**Rainy day delays in October become a concern for (left to right) Lt. Mark Doran, U.S. Navy Resident Officer in Charge Construction, Alessandro Fontana, U.S. Navy ROICC inspector and Tom Woosley, Det. 3, 16th Air Force PMO project manager for the fitness center.**  
(Photo by SrA Lakisha Croley)

NATO approval both for the authorizations of the basic project and for changes when these are needed.”

“As the PMO started maturing in its second year with additional processes and procedural improvements, the program was back under control by introducing methodology, capabilities, maturity and success into our program,” said Colonel LaGassey. “We started reaching a level of success; our maturity level as team members improved with customer satisfaction along with our desire to do even better the next time. We continually see enthusiasm that naturally results from cutting the ribbons on new facilities.”

# Jumping Horses

**RED HORSE**  
Establishes New  
Airborne Capability

Airborne RED HORSE is a reality. The concept was approved by the Commander of Air Combat Command and briefed to Air Staff in October.

“Jump coded or ‘J-coded’ parachute training slots have already been approved by Air Staff,” said Brig Gen Pat Burns, The Air Combat Command Civil Engineer.

The need for a rapidly insertable engineer airfield assessment and repair capability was demonstrated in the Balkans and Southwest Asia. Coalition forces were prevented from using highly desirable airfield locations because of airfield bomb damage, some of it inflicted by our own forces early in the conflict. In other cases, airfields were unusable simply because they lacked maintenance and repair. The lesson learned is that a rapidly insertable engineer capability is required, one that includes not only airfield repair capability, but basic explosive ordnance disposal, chem-bio detection, and fire rescue capability, as well.

According to Brig Gen Burns, “Our vision is that, ultimately, combatant commanders will have an air-droppable airfield assessment and repair capability.”



**RED HORSE engineers prepare for Exercise SAFE FLAG where they demonstrated use of the GeoWeb cellular confinement system for pavement repairs. (Photos courtesy HQ ACC/CE)**



**Never separated far from their equipment, airborne engineers will parachute with it or be delivered with their sling-loaded equipment as part of an air-insert operation.**

Airborne RED HORSE (ARH) will not only parachute into remote and inaccessible airfields—it will be capable of air insert by helicopter in an air assault style, “fast rope” rappel operation. With three RED HORSE squadrons mastering airborne skills, the capability will exist to deploy to three different airfields simultaneously.

The Airborne RED HORSE Concept of Operations was developed in close coordination with the 820th Security Forces Group at Moody AFB. That group forms the core of a Contingency Response Group during contingency operations. RED HORSE members and members of the 820th SFG demonstrated training and skills during



Exercise SAFE FLAG in November 2002 at Avon Park Air Force Range, where the CONOPS initial operating capability was demonstrated.

In addition to complementing the CRG, the four phases of the Airborne RED HORSE CONOPS (deploy, assess, prepare, and establish) fit logically within the Air Force's new concept of Air & Space Expeditionary Force "force modules." ARH will deploy during the "Open the Airbase" force module and remain for early phases of the "Establish the Airbase" module. The CONOPS calls for ARH engineers to rapidly deploy into austere locations, assess airfield capabilities, prepare helicopter or aircraft landing areas, clear obstacles, install emergency airfield lighting systems and make expedient airfield damage repairs. They will also test for potable water sources, perform expedient force protection construction, clear explosive hazards, assess potential nuclear, biological and chemical and toxic industrial material hazards, and provide fire rescue and emergency medical services.

Establishing an airborne engineer capability is new territory for the

Air Force, according to Capt Kevin "Ozzie" Osborne, a civil engineer with the 819th RED HORSE Squadron, Malmstrom AFB, MT, after training for years on rapid runway repair procedures where all equipment was prepositioned and stockpiled. Members of the 819th, 820th and 823rd RED HORSE Squadrons have been on an aggressive schedule to identify equipment and train for their new mission capability.

This new style requires use of a mobile airfield repair equipment set (MARES), one that is lightweight yet able to withstand an airdrop or sling load stresses. In addition to demonstrating the sand grid method of crater repair, these HORSEmen have successfully tested lighter, leaner equipment that includes the IHI IC-45 Crawler Carrier all-terrain dump truck, CAT 420D IT backhoe loaders, and CAT 277 multi-terrain loaders.

### A Horse With Wings

The RED HORSE community came one step closer to making this new mission a reality when the first



**Airborne RED HORSE will be trained and equipped to quickly repair airfield bomb damage inflicted by enemy or coalition forces.**

RED HORSE engineer graduated from Army Airborne School in a ceremony March 28 last year at Fort Benning, GA. TSgt Joel Moore, an electrician with the 819th RHS, was the first of many RED HORSE members planned to earn their jump wings in the three-week course. ARH members also will attend a 13-day Army Air Assault course where HORSEmen will learn how to sling load equipment and rappel from helicopters.

Ultimately, airborne RH units will provide combatant commanders with an air droppable or air insertable airfield assessment and repair capability at airfields that would otherwise be inaccessible.



**Firefighters train with "lighter and leaner" John Deere firefighting equipment, developed by Air Force Research Labs, at the 823rd RHS, Det 1, Silver Flag site, Tyndall AFB, FL. This standard 4x6 all-terrain vehicle, fitted with an ultra high pressure system, has two hoses and can dispense both water and foam.**



***"Our vision is that, ultimately, combatant commanders will have an air-droppable airfield assessment and repair capability."***

**— Brig Gen Patrick A. Burns**

# Military Construction in the

*Scoring in the Red Zone Requires Teamwork*



by Dennis Firman  
HQ ACC

*The “Red Zone” in football is defined as the last 20 yards from the goal line. It’s hard to score in the Red Zone because the defensive team has less area to defend and can concentrate its effort. Likewise, the offensive team has less area in which to maneuver and is limited in its plays. It takes the focused and precise execution of all players doing their assigned task to advance in the Red Zone. Any member who fails to perform his assignment can cause the team to fall short of its goals.*

*Coach Fisher DeBerry, the U.S. Air Force Academy’s head football coach, had this to say about the Falcons operating in the Red Zone: “The team must have a different mindset on how to approach business in the Red Zone. The whole team must become very, very committed and very, very dedicated to be successful. It’s a little tougher and they have got to reach down and reach forth for a little more effort. And they have got to pledge to themselves that they are not going to let each other down and that they are going to do their jobs when it gets down to the most critical part of the field.”*

Why are we talking football terms in an engineering magazine? Like the Red Zone in football, military construction (MILCON) projects reach a point near the last 20 percent of construction when work slows and becomes more difficult. Typically, getting to within 60 days of beneficial occupancy of the facility is easy. The tough part starts with the final push to complete the project, get the users moved in, wrap up financial transactions, and close the project out.

Historically, project completion and financial closeout take too long, interrupting the facility users and tying up funds that could be used on other MILCON projects. Coordination with personnel from many organizations and dedicated commitment by all are required to complete the project and financial closeout in a timely manner.

## The Red Zone Meeting

Air Combat Command has developed an innovative Red Zone construction management concept designed to properly complete projects as quickly as possible. The key to the concept is the Red Zone meeting.

The goal of the Red Zone meeting is to build a schedule of events necessary to achieve project completion and closeout within 120 days of beneficial occupancy. The meeting is typically held 60 days before anticipated beneficial occupancy. Everyone involved meets to develop a plan and schedule to complete the project.

The meeting must achieve three objectives. First, representatives from the organizations responsible for specific jobs must attend. Second, attendees must be able to identify the tasks necessary to complete their portion of the remaining work. Third, each must be able to commit to finishing their organization’s task by the scheduled date.

## Key Participants

Key participants at the Red Zone meeting include the program manager, financial manager, resident engineer, contracting officer, architect-engineer of record, and representatives from the base fire department technical services section, communications squadron, using agency, and civil engineer operations and engineering flights. Others involved in the project should also attend.

The program manager chairs the Red Zone meeting and guides the discussion in two main areas — construction and financial status. The group discusses project



elements and reaches a consensus on remaining work and the funding required. Participants build a schedule for completing each task and assign responsibility for actions to reach financial completion. The program manager records the key project milestones, which are copied and distributed to each member by the end of the meeting.

## Key Milestones

Based on past experience, ACC has developed a list of key project completion milestones that should be discussed and scheduled during the Red Zone meeting. The list was developed for a typical MILCON project, so not all milestones on the list may apply to your project. Likewise, there may be other key milestones not on the list that should be added. Those organizations responsible for completing a milestone should be able to commit to a date that does not conflict with or delay other key milestones.

### Key project completion milestones are:

- HVAC system test and balance
- Installation of communications equipment to serve phones and computers
- Completion of landscaping
- Preparation of lock and key plan
- Delivery and installation of furniture
- Fire and safety inspections
- Pre-final and final project inspections
- Completion of punch list
- Beneficial occupancy date
- Delivery and installation of equipment
- Delivery of operations and maintenance training manuals
- O&M training of maintenance personnel
- Delivery of as-built drawings
- User move-in
- Ribbon-cutting ceremony
- Physical completion
- Final invoice submission and payment
- DD form 1354 signature
- Release of claims
- Final supervision, inspection and overhead billing
- Return of unobligated funds
- Financial completion and closeout
- Focus on what counts: attitude, direction and teamwork

## Attitude, Direction and Teamwork

The Red Zone concept grew out of ACC's emphasis on finding new ways to improve its construction programs. Our goal is still to deliver quality facilities on time and within budget, just like all major commands. We're using the Red Zone concept to focus on doing even better in meeting that goal.

This renewed focus has three very important components benchmarked from Brig Gen Pat Burns', the ACC Civil Engineer's, personal focus areas — attitude, direc-

tion and teamwork.

First, Red Zone is about a change in *attitude*. The contractor, the Air Force, our construction agent, and the user need to crank up and refocus during the last 120 days of construction. Second, Red Zone is about *direction*. We all need to remember where we're headed. It's about finishing the project right, now that we're this close. And finally, Red Zone is about *teamwork*. No matter how hard any one of us may want to do great to finish the project, it takes the whole team to get there.

Every person on the construction team — the contractor, the user, the project manager, the agent, and the base-level manager — has a critical role to play in the successful completion of the project. It takes that attitude change, a clear direction as to where we're headed, and a committed team effort to succeed in great tasks.

Coach Vince Lombardi once said, "Football isn't about what great individuals did ... football is about great teamwork that did what other teams couldn't do." That's where we're headed with the Red Zone concept, and we want all our construction partners to be a part of our team.

## USACE Signs On

The U.S. Army Corps of Engineers recently endorsed ACC's Red Zone meeting initiative as an approach for timely completion and closeout of MILCON projects. Engineering and Construction Bulletin Number 2002-14, Subject: MILCON Project Closeout, The RED ZONE Meeting, dated May 22, 2002, implements the Red Zone meeting for all MILCON projects managed by the Corps of Engineers.

Maj Gen Carl A. Strock, USACE's Director of Military Programs, calls the Red Zone meeting an important "execution charrette." We have a design charrette to plan the project, and now we get the team together to plan completion of the project.

## Embrace the Concept

Our experience has been that participants in Red Zone meetings have strongly embraced this management concept. Not only have the meetings resulted in a clear assessment of what work remains to be done and a plan for completing those actions in a timely manner, but also in a renewed partnership and strong commitment to work together as a team. The Red Zone concept is proving to be an effective way to foster teamwork and synergy to "carry the ball across the goal line," and deliver quality facilities to our customers.

If you would like a copy of a video that explains the Red Zone concept, call the author at commercial (757) 764-3108, or DSN 574-3108.

*Mr. Dennis Firman is chief, Construction Division, Civil Engineer Directorate, HQ Air Combat Command, Langley AFB, VA.*

# Demolition in the Desert

*A multi-functional team completes a hazardous mission in Southwest Asia*

by Maj Dave Eaton  
380th ECES

The 380th Expeditionary Civil Engineer Squadron in Southwest Asia had the rare opportunity recently to lead a very narrowly focused mission with national security implications. The exact details and location are classified, however, the main objective was not: employ explosive demolition to destroy the remains of a U.S. asset and prevent the possibility of all or part of it falling into unfriendly hands.

When the opportunity arose, it seemed like a fairly straightforward explosive ordnance disposal operation — two, maybe three EOD technicians could do the job on their own. However, as we began to hash out the details of the mission, it became apparent that we would need a multi-functional team for several reasons.

First, and most important, was safety. Ironically, the actual explosive operation was probably the safest aspect of the job. The operation would require exposure to hazardous materials, heavy lifting and strenuous physical activity in a hot, dusty, austere location. Non-EOD members of the team included myself and a firefighter/emergency medical technician (EMT).

Because of the nature of the asset, I wanted to have a couple civil engineer craftsmen who were level-headed, could think on their feet, weren't afraid of being in an extremely remote location and had good mechanical

skills. I chose one of my heating ventilation and air conditioning technicians, SSgt Terry Pittman, and an electrician, SSgt Kerry Peters, not because of their Air Force specialty codes, but because of their ability to adapt, improvise and overcome.

Since our mission would require a lot of travel coordination, I wanted a logistician who knew how to work the system in our favor and get us in and out of the area quickly and easily. So, I brought a log-planner.

Finally, our downrange staging base had a bare bones manning structure lacking a doctor and a chaplain. Considering that, I added a couple officers who also were not afraid to be out working in the middle of nowhere. As time permitted, they

would provide their services to our host Army base.

That was our group — nine individuals who instantly melded into a cohesive team, chomping at the bit to do our part for our nation.

Once the team was set, the hardcore planning began. The first order of business was to arrange travel, and our loggie, TSgt Doug "Shaka" Kahn, was on top of it. Once Shaka was off and running, the EOD techs, SSgts Mark Porter and Scott Ackeret, and I started building the shopping list of tools we'd need to get the job done. Mark, who had already surveyed the site, had a pretty good idea of where to start. We'd need C-4, and lots of it. He figured about 600 pounds would do, but as we soon found out, the Air Force didn't possess that much anywhere in theater. Through exhaustive, behind-the-scenes work, my EOD flight chief, MSgt John Holland, managed to scrape together every block of C-4 in the Southwest Asia area of

responsibility. The most we could get our hands on was about 450 pounds, but it would have to do.

Once we sourced the explosives, we had one of our local squadron commanders, Lt Col Tom "Cajun" Thibodeaux, put together a specialized tool kit for us and brief us on the hazards we would be facing in the field. At the same time, the "doc," Maj Rich Lewis, built his medical kit, and the chaplain, Capt Bob Monagle, got his traveling church service bag, and the EMT, TSgt Dave Paul, collected his on-scene emergency kit. That may sound like a lot of people and equipment to bring into the middle of nowhere, but I didn't want Mr. Murphy, author of Murphy's Law, along for the ride if I could avoid it.

All the preliminaries done, the team began meeting to hash out responsibilities, get familiar with each other, understand the hazards inherent in the job and just keep our situational awareness sharp.

To backtrack just a little, we got the tasking late on a Wednesday afternoon for a planned departure Saturday morning. We were going to use Friday to make last minute adjustments in our equipment packages, scrounge up any missing items and get mentally ready for the task ahead. But, remember Mr. Murphy? He showed up Friday morning about 9 a.m. — our airlift would be arriving in two hours. Uh-oh, time to get moving. Fortunately, our home base is pretty small and it wasn't too much of a chore to round up the team and head to the flightline. Foiled again, Mr. Murphy!

We were finally wheels up at about 1:30 p.m. on our way to a stopover location to pick up our explosives. The next morning we were in the air again, en route to our downrange Army base. Once we hit the ground, it became apparent to me that all our preparation and stacking



The remains of the U.S. asset the team was sent to destroy was located on top of a 150-foot-high sand dune. (Photos courtesy 380th ECES)



the deck with team members was the right thing to do. This place was really out there. If you've ever driven across the Mojave Desert, you can imagine what I'm talking about.

Our Army hosts were fantastic. They got us bedded down quickly and were very helpful in arranging whatever we needed for our mission. That evening they hosted a final planning meeting to fill us in on how our airlift would flow to and from the site. The first element to flow to the demolition site would be the security detail — about a dozen well-armed soldiers who would fan out and create a secure perimeter for us. There were about 25 troopers dedicated to protect us. Even though we were in potentially hostile territory, I never felt unsafe or unguarded. There was no doubt those soldiers could handle just about anything for us.

Around 7:30 a.m. we arrived via Blackhawk helicopter at our work site. At first I thought our host base was one of the most remote places I'd ever seen, but this site had it beat. Nothing but sand dunes and scrub brush for as far as the eye could see. I've never seen so much "nothing" in my life.

The asset we had come to destroy was located on a 150-foot-high sand dune. It was obvious we had our work cut out for us.

Since Porter had been on the scene before, we were well-prepared with our plan of attack and got right to work. I split the team into small groups, each with an area of responsibility, with the objective of creating three piles of debris that we could concentrate our limited amount of explosives on and get the most bang for our buck.

The most challenging part of the work was that one of those piles was on top of the dune. It was slow, grueling work trucking 40-pound cases of C-4 up and down that pile of soft sand in 100-plus degree heat. However, to make a long story short, we were ready to "light the fuse and run" after about five hours of work. I must say that I am proud of what my team accomplished. Everyone carried

their share of the workload, and the teamwork was outstanding.

One of the main safety concerns of any explosive demolition is frag. So once the explosives were armed and dangerous, we fell back about 2,000 feet — well outside the specified distance for that quantity of explosives. That sounds like a long way away, but when 450 pounds of C-4 "goes boom," you can feel the shockwave even from that far.

The EOD techs designed the charges to minimize frag by directing the blast downward as much as possible. They did an excellent job. After the blast, we re-approached the site and found very little frag along the way. The farthest the blast had thrown any fragments was about 500 feet. What we did find was small and unrecognizable as anything but mangled steel.

At the site, there was not much more than a scorch mark in the sand left of any of the three piles. Mission accomplished, we were back in the Blackhawks, skimming along at about 50 feet and 120 knots, by 12:30 p.m.

Once the shots were done, the doc and the chaplain returned ahead of us to perform their secondary missions of conducting clinic appointments and church services. It felt great for our team to bring something to our Army counterparts they didn't have.

And my CE craftsmen? They were busy, too. Pittman and Peters improved the quality of life at that base by pulling simple maintenance on environmental control units and electrical circuits. A little bit of quality of life goes a long way in places like that.

Even after a long day in the desert, we didn't have much time to rest. Our return flight was due in at 5 p.m. that evening. We hustled back to our tents, gathered up our gear and were back on the airplane by 5:30 p.m. We didn't even have time to shower off the sand, sweat and grit from the work site.

## Lessons Learned

Some of the things we learned about doing operations like this seem like common sense in hindsight; however, they were not apparent as we prepared.

First, if on a mission where extensive military travel is involved, always bring a loggie. Kahn was actually the last of the team members selected, but he was invaluable in tracking our airlift and coordinating load plans for us. Had he not been part of the team, it would have taken me hours to figure out what he did in five minutes.

Next lesson: be flexible. During our preparations, I told the team to be ready for anything, and they were. Our airlift showing up a day early, and the fact that we didn't miss a beat, was a prime example of that.

Brief, brief, brief. In situations like this, a team can't have too much information. By the time we arrived at the demolition site, the team was ready. Nothing surprised us — not the safety and health hazards, the weather, the soft sand on that dune, nor the desolate location.

In conclusion, this was a fast-paced, hazardous mission that we pulled off successfully because we were focused and prepared. Always keeping safety at the forefront, we handled a dangerous situation with ease. My thanks go out to the soldiers of the 82nd and 101st Airborne who hosted us, protected us and got us to and from the job site.

*Maj Dave Eaton is commander of the 380th Expeditionary Civil Engineer Squadron in Southwest Asia.*



**The team created three piles of debris at the job site to concentrate their limited amount of explosives on.**

# Directional

*Lakenheath CEs use trenchless technology to install piping underneath an emergency runway*

by Capt Ted Munchmeyer, P.E.  
and Paul Briggs, 48th CES

At most locations, utility installations and upgrades are projects that provide unique challenges to civil engineers. There are cost and time considerations, as well as ensuring construction services minimize environmental damage. These considerations only multiply when heavily populated areas or obstacles such as runways and taxiways must be crossed.

Meanwhile, the need for redundant and flexible utility services has become increasingly imperative. Anti-Terrorism/Force Protection (AT/FP) concerns are facilitating the drive to find cost-effective ways to provide uninterrupted critical utilities. This summer, the 48th Civil Engineer Squadron at RAF Lakenheath found an ingenious way to meet all of the latest AT/FP requirements while saving time and money on their latest water system piping project.

RAF Lakenheath is in the middle of a \$4.3 million multiphase water distribution upgrade and expansion project for the vast majority of the base. The installation currently provides clean water for several thousand personnel, which equates to nearly 3 million gallons of water per day for various uses, including fire fighting capabilities and aircraft maintenance. To ensure water requirements can more easily avoid infrastructure AT/FP vulnerabilities, as well as allow routine maintenance to occur without disrupting service, RAF Lakenheath developed a ring main system around the operations section of the installation. Once completed, this new system will permit a redundant water supply to those critical operations with low-level maintenance piping that will last beyond 50 years.

The project required significant engineering analysis

and flexibility by both the 48th CES and the selected contractors. It required installing more than 13 miles of 16-inch internal diameter high-density polyethylene (HDPE) pipe around the runways, roads and high traffic parts of the installation. This thick piping, which is rated at 100 psi, would be an excellent long-term material, allowing 100 percent deliverable water flow rates for critical items such as operational fire protection and aircraft maintenance.



**The Lakenheath project required installation of over 13 miles of 16-inch internal diameter high-density polyethylene pipe around the bases runways and high-traffic areas. (Photos courtesy 48th CES)**

However, there were site conditions and operational restrictions making it difficult to simply install the piping. First, the RAF Lakenheath airfield has a very high groundwater table, and using open ditch construction for pipe installation would be difficult, if not expensive, to administer. Second, the piping needed to cross the emergency runway, and cutting through this thick combination of asphalt and concrete was an option the base command strongly wanted to avoid. Finally, air operations could not be halted — runways at RAF Lakenheath must be fully operational at a moment's notice. An alternative to the open trench method of installing the water main was needed.

Trenchless technologies have increasingly been accepted for construction in urban areas as well as difficult to excavate locations. There are several different methods of trenchless technologies, all with different benefits and limits to installing virtually any size or type of piping material.



**Directional drilling uses a system of augers, pipes and Bentonite clay material to install pipe with little outward disturbance.**

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One form of trenchless technology available at Lakenheath, called Directional Drilling, offered a solution to the problem of installing piping underneath the emergency runway. The main contractor, Balfour Beatty Ltd., subcontractor Trenchless Technologies Ltd., and 48th CES project manager Paul Briggs believed Directional Drilling offered the most advantages to completing the project and avoiding operational downtime.

This method involves using a system of augers, pipes and Bentonite clay material to install the pipe with little outward disturbance. It requires very little excavating and trenching as well as minimal pumping of groundwater, a slow and laborious process. The most important of all the positive benefits however was that installing 200 yards of piping underneath the runway could be completed in four working days, thus minimizing the possibility of disturbing airfield operations.

Upon site set-up, a 4-inch bladed directional bit attached to a hollow steel pipe was placed into the ground at a 45-degree angle. This bit proceeded at 150 to 250 revolutions per minute, cutting at a rate of up to 65 feet per minute to a depth of 20 feet. The directional bit was remotely controlled by a site worker who could locate and steer the bit in any direction, ensuring proper direction of the proposed line. Since soil conditions at RAF Lakenheath were favorable, the directional bit was easy to maneuver through the high silt/clay topsoil and onward through the soft chalk material 3 yards below ground level. Directional control was critical during the project since a large, 4-foot diameter storm sewer line crossed directly in the pathway of the new line. The operator could not afford an accidental "connection" into the storm sewer system.

A Bentonite clay slurry at a high pressure of 500 psi was pumped into the bit, providing a smooth lining for the pipe to follow. Approximately 200 yards away, the auger-tipped pipe arrived with full connectivity to the other side of the runway in less than four hours of precision drilling.

Once the 4-inch bit was free of the ground and the ground water that remained in the small tunnel was drained, a 30-inch diameter barrel boring bit was attached from the receiving side. This bit returned to the starting side via the route in which the 4-inch pipe was currently located. This new bit also increased the size of the tunnel to 2.5 feet in diameter, a size larger than the final pipe diameter. Bentonite clay was again inserted through the bit to ensure the tunnel would remain intact as well as expand to minimize water penetration from the surrounding ground water.

With the large tunnel now drilled, the HDPE was fed into the tunnel using the auger bit as a guide. The piping had already been fused together, so the entire 18-ton length was installed in one piece, minimizing potential for breakage and

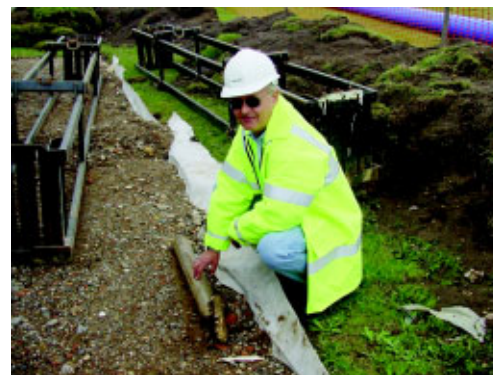
poor fitting. The installed piping was more than 2.5 inches thick; about twice as thick as the rest of the network since the depth and potential loading from incoming aircraft required a stronger pipe.

The entire phase of the project took only four days for three operators to complete on 12- to 16-hour shifts, despite less than favorable weather conditions. Due to the latitude, long summer days allowed for such extreme scheduling to proceed without need for external lighting. Minimal equipment, including an HDPE butt-fusion joiner, backhoe and support trucks were the only vehicles necessary to install the pipe. The installation of piping under the runway, conducted over the long 4th of July weekend, avoided runway closure and ensured minimal disturbance of base operations and an upcoming NATO exercise.

Using new and innovative methods of design and construction, RAF Lakenheath will be able to have a redundant water distribution system at a cost much below previous estimates. If alternative methods of installing the pipe were used, the costs were estimated to have likely doubled or even tripled the final sum. It would have also required the runway to be closed, since locating the line in another location was not possible for AT/FP requirements.

Thanks to the dedication of the members of the 48th CES and its contractors, the spirit of providing excellent customer service with minimal impact to base operations has once again been proven.

*Capt Ted Munchmeyer is an IMA reserve officer and Paul Briggs is a project manager, both for the 48th Civil Engineer Squadron, RAF Lakenheath, U.K.*



**Paul Briggs, 48th CES project manager, inspects installation of Lakenheath's new redundant water distribution system.**

Trenchless Technology	Suitability	Limits
Directional Drilling	For polymeric or steel pipes and ducts on straight or curved routes in soft soils	4- to 48-inch pressure or gravity lines up to 1 mile in length
Auger Boring	Hydraulic driven non-displacement boring for pipes and casings	6- to 42-inch pipes for distances up to 200 yards
Rock Boring	Boring for steel casings in gravels, cobbles and solid rock	4- to 24-inch casings up to 175 yards; expensive
Impact Pipe Ramming	Install steel sleeves in various situations	6- to 64-inch sleeves up to 100 yards in length
Rod Pushing or Impact Moling	Best for installing small diameter pipes and ducts through hydraulic or impact methods	2- to 4-inch pipes and ducts under 25 yards in length

## Firefighters Train for Underwater Search, Rescue

A dozen firefighters at Keesler Air Force Base, MS, can add underwater rescue and recovery skills to their resumes after completing master dive training recently.

When Fire Chief John Rulapaugh came to Keesler about a year ago from Laughlin AFB, TX, he brought with him 32 years experience as a firefighter and 12 years as a rescue diver.

"When I first arrived, it seemed strange to me that the area is bounded on three points by water, but the base had no dive team," the chief said. "Our planes cross the water, our vehicles cross bridges, (and) many people spend their recreation time on the water. It's our duty to protect our people, both on- and off-duty."

The new fire chief took his concerns to Col Lance Young, 81st Support Group commander, and Lt Col David Funk, 81st Civil Engineer Squadron commander. They tasked him to investigate what it would cost for training and equipment.

His search led him to Billy Wise, a certified instructor from D'Iberville, MS, who had trained many dive teams in the surrounding communities.

"I evaluated the way Billy taught his classes and found him to be very thorough," the chief explained. "After watching two or three classes, I knew he was the guy we wanted to train our team."

Two months and \$43,000 later, Keesler now has a team of 12 certified master divers.

Master diver training involves open water, deep water, night diving, rescue diving and a variety of specialty courses. The team trained for six days in Destin, FL, then took a day trip to Morrison Springs, FL, and wrapped up their instruction at

Martin's Lake north of Ocean Springs, MS.

"We have a 100-percent functional team now," the chief said. "We plan to get six more firefighters trained later. They'll pick up some of the specialties that we haven't covered yet, so we'll have a team that can do it all. When we're finished, Keesler will have the largest dive team on the coast."

"Water is the most powerful force in the world. It can be dangerous, and we have to treat it with respect." (Susan Griggs, 81st Training Wing Public Affairs)



Keesler firefighters Troy Smith (left) and David Tenace practice rescue techniques. (Photo by Kemberly Groue)

## USAFE PERSCO Teams Train at Silver Flag

For the first time, personnelists are honing their expeditionary combat support capabilities during Silver Flag exercises at the U.S. Air

Forces in Europe Construction and Training Squadron, Ramstein Air Base, Germany.

A six-member personnel support for contingency operations (PERSCO) team from Royal Air Force Mildenhall, England, and Ramstein AB participated in a USAFE Silver Flag exercise Sept. 6-12, practicing the duties they must conduct in a contingency environment.

"Silver Flag gives PERSCO warriors the opportunity to participate in agile combat support. It helps them provide better combat support to the deployed commander," said Col Roger T. Corbin, director of personnel accountability at Air Force Personnel Center, Randolph Air Force Base, TX.

Silver Flag provides crew task training free from home-station

restraints. Prior to the addition of PERSCO, Silver Flag focused on civil engineering Prime BEEF (base engineer emergency force) teams and services Prime RIBS (readiness in base services) teams.

"Adding PERSCO to Silver Flag enhances USAFE's expeditionary war fighting capability by developing field training opportunities for PERSCOs in realistic exercise and wartime scenarios," said Capt Jill Metzger, USAFE Theater Aerospace Operations Support Center.

"The participants have the opportunity to refresh, practice and enhance individual and team tactical deployment and contingency skills while focusing on combat support core competencies, force accountability actions and tactical leadership," she said.



TSgt Catherine Vincent and SSgt Amy Kanan, both from the 100th Mission Support Squadron, Royal Air Force Mildenhall, U.K., assemble an alpha roster for personnel accountability during a Silver Flag exercise at Ramstein Air Base, Germany. (Photo by SSgt Justin D. Pyle)



## A-Gram List



Effective April 1, 2002, AFCESA converted to publishing A-Grams in electronic format only. They are available on the AFCESA public website at <http://www.afcesa.af.mil> under Library/Publications. A list of new A-Grams will be published in each edition of the *Air Force Civil Engineer*. Below is a list of A-Grams that have been published since the last edition.

- 02-22 — Unidirectional Water Main Flushing
- 02-23 — Air Force Parametric Cost Engineering System (PACES)
- 02-24 — Air Force Qualification Training Package (AFQTP) — For AFS 3E9X1, Volume 1 of 2
- 02-25 — Automated Civil Engineering System Operations (ACES-OP) Commercial-Off-The-Shelf (COTS) Software Contract Award



## The Creative Side of ACE

U.S. Air Force Academy civil engineer cadets learn welding techniques at the Academy's Field Engineering Readiness Laboratory (FERL). Shown are some of the sculptures they created with their newfound skills. (Photos courtesy USAFA)



Each Silver Flag exercise is six days long and begins with each class planning to bed down their team of approximately 110 people, explained SMSgt Les Jones, USAFE CTS superintendent.

"Each class receives about four days of classroom and hands-on training. The week culminates with about a two day-long fog of war scenario where the team applies what it's learned during the week," said Jones. "Students will do many of (their normal) operations and a host of others while dressed for MOPP (mission-oriented protective posture) conditions from MOPP Alpha through MOPP 4."

During contingency operations, PERSCO teams are responsible for

deciding the location of initial personnel processing. They then maintain personnel accountability by tracking and updating personnel duty status changes.

Silver Flag emphasizes team training and enhances the war fighter's capability by teaching everything from the basics of beddown operations to base sustainment efforts.

"Silver Flag provided my team and me an excellent opportunity to utilize our PERSCO skills in realistic bare-base scenarios," said Capt Kathryn Brown, team leader for the first Silver Flag PERSCO team.

Brown, who is from Ramstein's 86th Mission Support Squadron, said Silver Flag gave the PERSCO team

the hands-on skills needed to prepare them for a December deployment as part of Air and Space Expeditionary Force packages 7 and 8.

"It's a highly strenuous, stressful and taxing exercise," said Jones. "The students walk away from it exhausted but feeling good about themselves and their team. They know they have the tools and the ability to employ them in a deployed environment."

The USAFE Construction and Training Squadron conducts six Silver Flag classes per year. Silver Flag programs are also located at Tyndall AFB, FL, and Kadena AB, Japan. (Capt Dani Johnson, USAFE News Service)

# Continuing Education

Registration for resident courses, which are offered at Wright-Patterson AFB, OH, begins approximately 90 days in advance. Applications must go through the student's MAJCOM Training Manager. Registration for the satellite offerings, marked with an (S), closes 30 days before broadcast. For satellite registration, course information, or a current list of class dates, visit the CESS website at: <http://cess.afit.edu>.

## AFIT Civil Engineer and Services School

### Wright-Patterson AFB, OH

Course No.	Title	Off	Start Dates	Grad Dates
MGT 101	Intro. to Base Civil Engineer Organization	03B	14-Apr-03	07-Jun-03
ENG 460 (S)	Mechanical Systems for Managers	03A	14-Apr-03	18-Apr-03
Sat. Seminar	Hzds. Waste Accum. Site/Initial Point Mgmt.	03B	24-Apr-03	24-Apr-03
MGT 400	Civil Engineer Commander/Deputy Course	03A	05-May-03	16-May-03
ENV 418	Environmental Contracting	03B	05-May-03	16-May-03
ENV 101	Intro. to Environmental Management Flight	03A	05-May-03	09-May-03
ENV 020 (S)	Environmental Compliance Assessment	03C	12-May-03	15-May-03
Sat. Seminar	Energy Savings Performance Contract	03C	20-May-03	20-May-03
Sat. Seminar	Stormwater Seminar	03B	21-May-03	21-May-03
ENV 531	Air Quality Management	03B	02-Jun-03	06-Jun-03
ENV 022 (S)	Pollution Prevention Program Ops. & Mgmt.	03C	02-Jun-03	05-Jun-03
MGT 412	Financial Management Course	03B	09-Jun-03	20-Jun-03
ENV 419	Env. Planning, Programming & Budgeting	03C	10-Jun-03	12-Jun-03
MGT 426 (S)	SABER Management	03A	10-Jun-03	13-Jun-03
ENG 464	Energy Management Technology	03B	16-Jun-03	20-Jun-03
MGT 438 (S)	Logistics Management	03A	16-Jun-03	20-Jun-03
MGT 484	Reserve Forces Air Base Combat Engineering	03B	16-Jun-03	27-Jun-03
Sat. Seminar	Hzds. Waste Accum. Site/Initial Point Mgmt.	03B	19-Jun-03	19-Jun-03
ENG 466	Energy Management Policy	03B	23-Jun-03	27-Jun-03
MGT 430	Operations Flight Commanders' Course	03A	23-Jun-03	27-Jun-03
ENV 220 (S)	Unit Environmental Coordinator	03C	23-Jun-03	27-Jun-03
ENV 222 (S)	Hazardous Material Management Program	03C	23-Jun-03	26-Jun-03

### Sheppard AFB, TX

Course No.	Title	Start Dates	Grad Dates
J3AZR3E051-003	Cathodic Protection	15-Oct/31-Oct/29-Nov	28-Oct/14-Nov/12-Dec
J3AZR3E051-007	Airfield Lighting	01-Oct/23-Oct/05-Nov	10-Oct/01-Nov/15-Nov
J3AZR3E051-008	Electrical Distribution Sys. Maint.	10-Oct/13-Nov	07-Nov/11-Dec
J3AZR3E051-012	Fire Alarm Systems	01-Oct/26-Nov	25-Oct/20-Dec
J3AZR3E051-013	Intrusion Detection Systems (IDS)	03-Oct/25-Oct	23-Oct/14-Nov
J3AZR3E071-001	CE Adv. Elec. Troubleshooting	01-Oct/30-Oct/29-Nov	29-Oct/27-Nov/06-Jan
J3AZR3E472-000	Liq. Fuels Storage Tank Entry Spvsr.	01-Oct	11-Oct
J3AZR3E451-004	Fire Suppression Systems Maint.	01-Oct/23-Oct/02-Dec	22-Oct/13-Nov/20-Dec
J3AZR3E471-101	Bare Base Water Purification and Distribution Systems	02-Oct/16-Oct/06-Nov	11-Oct/25-Oct/18-Nov
J3AZR3E453-003	Pest Management Certification	14-Nov	12-Dec
J3ARR3E453-002	Pest Management Re-Certification	07-Oct/04-Nov/09-Dec	11-Oct/08-Nov/13-Dec
J3AZR3E052-013	CE Advanced Electronics	17-Oct	14-Nov
J3AZR3E072-002	Troubleshoot. Elec. Power Gen. Eq.	16-Oct	06-Nov
J3AZR2F051-001	Fuels Quality Control	16-Oct/02-Dec	05-Nov/20-Dec
J3AZR2F051-005	Cryotainer Maint. & Support Equip.	01-Oct/21-Oct/02-Dec	15-Oct/01-Nov/13-Dec
J3AZR2F051-006	Cryogenics Production	16-Oct	17-Dec
J3AZR2F091-001	Petroleum Logistics Management	22-Oct/03-Dec	07-Nov/19-Dec
J3AZR3E151-013	HVAC/R Controls Systems	04-Nov	10-Dec
J3AZR3E151-015	Indirect Expansion Systems	04-Nov/03-Dec	22-Nov/20-Dec

### Ft. Leonard Wood, MO

Course No.	Title	Start Dates	Grad Dates
J3AZP3E571-003	Engineering Design	21-Oct/02-Dec	01-Nov/13-Dec
J3AZP3E571-005	Construction Materials Testing	07-Oct/12-Nov	18-Oct/22-Nov
J3AZP3E971-003	Advanced Readiness	18-Nov	22-Nov
J3AZP3E971-005	NBC Cell Operations	21-Oct/02-Dec	25-Oct/06-Dec

### Indian Head, MD

Course No.	Title	Start Dates	Grad Dates
J5AZN3E871-001	Adv. Access and Disablement	07-Oct/28-Oct/02-Dec	21-Oct/08-Nov/13-Dec
J5AZN3E871-002	Advanced EOD Course	28-Oct/02-Dec	08-Nov/13-Dec

### Gulfport, MS

Course No.	Title	Start Dates	Grad Dates
J3AZP3E351-001	Low Slope Maint. & Repair	21-Oct/12-Nov/02-Dec	31-Oct/02-Nov/12-Dec

Additional course information is available on the 366th TRS web site at <https://webm.sheppard.af.mil/366trs/default.htm>. Students may enroll on a space-available basis up until the class' start date by contacting their unit training manager.

## 366 Training Squadron



## CE Teams Support Micronesia

Civil engineers looking for a rewarding temporary duty assignment overseas may be interested in joining one of the Civic Action Teams (CAT teams) that travel to the Federated States of Micronesia (FSM) each year.

The United States has a long-standing history of supporting the people there through a compact agreement between the two nations. Every six months, 13 U.S. Air Force military members deploy to Truk Island (sometimes called Chuuk), and every 12 months to Phonpei, to provide technical assistance and training in a variety of maintenance skills. The 13-person team consists of an officer-in-charge, assistant officer-in-charge, three structural specialists, two pavements and construction equipment operators, one utilities specialist, one electrician, one independent medical technician, one supply specialist, and two vehicle mechanics.

Each team is responsible for training 13 local apprentices while completing a variety of state projects, conducting community relations programs and providing technical assistance. Following are some highlights of what members of CAT team 02-01 (October 2001-May 2002) were able to accomplish recently.

Structures troops renovated the hospital pediatrics ward, installing 4,000 square feet of ceramic tile, while the P&E troops maintained existing roads and built a new one. Our electrician upgraded electrical systems at the governor's administra-

tive office and a school and maintained all HVAC equipment. All members provided tech assists on individual homes and businesses.

The medical technician's main responsibility was to maintain the health of the team as well as train local healthcare workers in various medical procedures. Our technician trained and treated more than 1,000 people on the main island and several outer islands.

The supply specialist is the glue that holds the team together — ordering, receiving and issuing all materials, most importantly the food and beverages that keep the team working and happy.

The utilities specialist is literally the lifeline of the team as this person hauls and treats all water — thousands of gallons weekly. Our team was blessed to complete the entire TDY without anyone becoming ill from poorly treated water.

Last but not least, the vehicle mechanics maintained an aging fleet that was constantly under attack by "the Rust Monster."

Project selections are completed by the OIC/AOIC and local authorities, then reviewed by the OIC to determine their training value and feasibility. Once a project is selected and a scope of work finalized, lead craftsmen establish a bill-of-materials. The supply specialist processes the requirements to the U.S. Navy support team in Guam, which in turn processes the materials order. The next team constructs the projects this team estimated. The materials are ordered so that they'll be available and

*Continued Page 22*



**Civil engineers on Truk Island assisted in air-evacuating several critically injured patients and off-loading more than 500,000 pounds of supplies following Tropical Storm Chata'an in July (see Editor's Note, following page). (Photos courtesy SMSgt Earl Tummings)**

## Readiness Challenge VIII Postponed Indefinitely

Readiness Challenge VIII, a biennial multi-national combat support competition, has been postponed indefinitely because of current and possible future mission requirements in support of operations ENDURING FREEDOM and NOBLE EAGLE.

The competition, originally scheduled for April 2003, demonstrates leadership, readiness, warfighting and contingency support capabilities of the U.S. and international teams.

Teams are composed of members from the Air Force civil engineer, services and personnel career fields. They compete in real-world scenarios designed to showcase their skills in setting up and maintaining self-sufficient field operations in a bare base environment during a deployment or contingency. (TSgt Michael Ward, Air Force Civil Engineer Support Agency Public Affairs)



on location when the next team arrives. This cycle continues team after team, so that worthy projects will be completed while training craftsmen who will help sustain the FSM for the future.

One of the most rewarding parts of this deployment is the opportunity to interact with local citizens through community relations programs. A tremendous effort is exhibited by the team daily, and nightly, as they go from village to village, and sometimes to outer islands, showing movies and participating in sporting events with men, women and children of all ages.

The Truk TDY is 180-190 days long and is the shortest TDY duration that will provide CE members with a remote credit and an overseas return date adjustment. It is also the last remaining remote assignment that pays \$35.00 a day per diem for the duration of the TDY. In the world of budget cuts and lost benefits, this may be the last avenue for supervisors and commanders to reward deserving folks for their years of hard work and dedication.

If you are one such deserving member, contact your supervisor for assistance in preparing a package for your consideration during the next team selection by the CE assignments folks at the Air Force Personnel Center at Randolph AFB, TX. (SMSgt Randall K. Skinner, former AOIC CAT 02-01, Eglin AFB, FL)

*Editor's Note:* Tropical Storm Chata'an struck the islands July 1-2, dropping 20 inches of rain in four days that resulted in more than 50 landslides that destroyed homes and lives. About 3,000 residents were sheltered in schools, churches or community centers. The CAT team's mission shifted when a state of emergency was declared and Federal Emergency Management Agency's help was requested. The team became the FEMA liaison for coordinating

receipt of relief supplies and personnel and marshaling relief aircraft. According to team member SMSgt Earl Tummings, they off-loaded more than 500,000 pounds of supplies from 28 C-130 aircraft in 15 days and delivered them to a secured ware-

house; assisted in air-evacuating seven critically injured patients; and pumped over 8,000 gallons of water from homes. The team played a major role in distribution of food, water, blankets and other critically-needed items.



**Tropical Storm Chata'an struck the islands in July, resulting in flooding and landslides that displaced thousands of residents. Although the road to their camp was washed out and blocked by fallen trees and power lines, the CAT team was able to play a major role in distribution of emergency supplies to local residents.**



## Air Force Garners Five DoD Firefighter Awards

Air Force firefighters recently received four of the six Department of Defense annual fire fighting awards and shared top honors for a fifth.

The Air Force firefighters received awards for military firefighter, civilian fire officer, military fire officer and fire department of the year. The heroism award was shared between an Air Force firefighter who responded to the World Trade Center attack and three Army firefighters who responded to the attack on the Pentagon.

DoD's Military Firefighter of the Year is SrA Emilio Aguilar, 18th Civil Engineer Squadron, Kadena Air Base, Japan; the Civilian Fire Officer of the Year is Randy Tsurusato, 99th CES, Nellis Air Force Base, NV; and the Military Fire Officer of the Year is SMSgt Kenneth Helgerson, 3rd CES, Elmendorf AFB, AK. The 56th CES fire department at Luke AFB, AZ, was named DoD Fire Department of the Year.

John Wright III, a Navy firefighter at Naval Air Station Jacksonville, FL, was named DoD Civilian Firefighter of the Year. The Air Force winner of this award and DoD competition nominee was Sean Shillato, 6th CES, MacDill AFB, FL.

SSgt Tyree Bacon, from the 514th CES at McGuire AFB, NJ, received DoD's Firefighter Heroism Award. He was a co-winner along with three Army firefighters — Mark Skipper, Alan Wallace and Dennis Young — who were assigned to the Pentagon's fire department.

Sergeant Bacon, a reservist and New York Supreme Court officer in Manhattan, received the award for actions taken just minutes after the Sept. 11 terrorist attacks on the World Trade Center. He and several co-workers rushed to the site to help rescue injured victims and administer emergency first aid.

The awards were presented Aug. 28 at the DoD Fire and Emergency Services Training Conference in Kansas City, MO. (TSgt Michael A. Ward, Air Force Civil Engineer Support Agency Public Affairs)



**Left to right, Mr. Randy Tsurusato, Civilian Fire Officer of the Year; SMSgt Kenneth Helgerson, Military Fire Officer of the Year; SSgt Tyree Bacon, Firefighter Heroism Award; Brig Gen Patrick A. Burns, HQ ACC/CE; Mr. Hoyd Sanders, Luke AFB Fire Chief, DoD Fire Department of the Year; and SrA Emilio Aguilar, DoD Military Firefighter of the Year. (Photo by Donald Warner)**

## Fox Receives Second Star

Brig Gen L. Dean Fox was promoted to the rank of major general Sept. 23.

General Fox is Director of Civil Engineering, Headquarters Air Mobility Command, Scott Air Force Base, IL. A U.S. Air Force Academy graduate, the general has served in a variety of Air Force civil engineer positions at base, major command and Headquarters U.S. Air Force levels. General Fox's assignments have included commander, 66th Civil Engineering Squadron, Sembach Air Base, West Germany, and Command Civil Engineer, U.S. Air Forces in Europe.

Among the general's awards and decorations are the Legion of Merit with oak leaf cluster, Defense Meritorious Service Medal, Meritorious Service Medal with five oak leaf clusters, Air Force Commendation Medal, Air Force Outstanding Unit Award with oak leaf cluster and Air Force Organizational Excellence Award with two oak leaf clusters. General Fox was also awarded the National Defense Service Medal with two service stars and the Vietnam Service Medal with service star.

General Fox was recently selected for reassignment as The Civil Engineer, Deputy Chief of Staff for Installations and Logistics, Headquarters U.S. Air Force, Washington, D.C.



**Maj Gen L. Dean Fox**

## Corsetti Receives Distinguished Civilian Service Award

A former Air Force civil engineer recently received the highest award the Department of Defense gives to career civil servants.

Deputy Secretary of Defense Paul D. Wolfowitz presented the DoD Distinguished Civilian Service Award to William V. Corsetti and five other DoD employees during a ceremony at the Pentagon Oct. 22. Corsetti is a senior strategic planner for the Joint Staff. He was recognized for his contributions to the development of the 2001 Joint Strategy Review, analysis of the risks identified during the Dynamic Commitment and Positive Match war games and the preparation of the Chairman's assessment of risk in the Quadrennial Defense Review report.

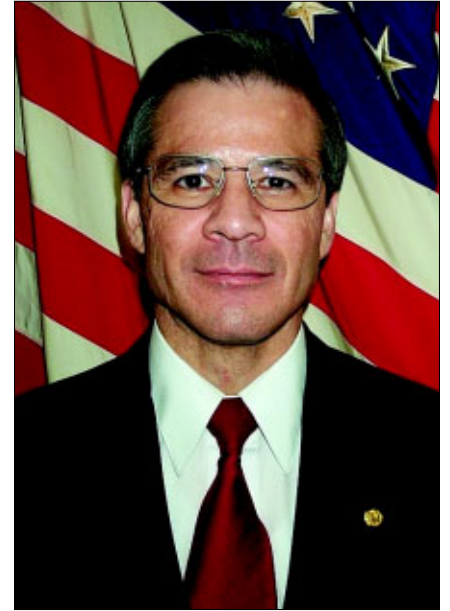
Mr. Corsetti is a career civil engineer (electrical). He graduated from the Air Force Academy, served five years on active duty and held several civil service positions within the Air Force, including director of technical support at the Air Force Civil Engineer Support Agency, and

chief of the Program Management Branch, Office of The Civil Engineer.

The DoD Distinguished Civilian Service Award recognizes employees at all levels for exceptional achievements that benefited the entire department. The award is intended to encourage the nomination of workers at all levels of responsibility and seniority who may not have the opportunity to compile a myriad of accomplishments in a position, but who have made significant and lasting contributions with department-wide impact during a specific period.

The other award recipients are: John H. La Raia, assistant for administration, Office of the Under Secretary of the Navy; Peter B. Klein, senior collection adviser, Defense Human Resources Intelligence Service, Defense Intelligence Agency; Isaiah Ravenel, detachment chief, Detachment 2, Pacific Air Forces Air Postal Squadron, Yokota Air Base, Japan; Nancy L. Spruill, director, acquisition resources and analysis,

Office of the Under Secretary of Defense for Acquisition, Technology and Logistics; and Sarah A. Tackett, chief of professional staff management, Headquarters Air Force Materiel Command, Wright-Patterson Air Force Base.



William V. Corsetti

## CEs Among Chief of Staff's Team Winners

Air Force Chief of Staff Gen. John P. Jumper announced the winners of the 2002 Chief of Staff Team Excellence Award during a presentation at the Air Force Association convention in Washington DC Sept. 17.

Among the five winners of this year's award, which recognizes outstanding team performance and promotes systematic process improvement, was the Air Force Flight Test Center Base Energy Team, 95th Civil Engineer Group, Edwards AFB, CA. The team was recognized for mobilizing a highly effective response to California's recent energy crisis, including extensive heating and air conditioning system buyouts, building automation, aggressive public awareness, and arranging the largest renewable energy power contract in the Air Force. The positive impact resulting from their efforts rapidly transformed the Edwards energy

metric from last to first among Air Force Materiel Command bases.

Edwards' energy team also created a five-year, \$42 million utility cost savings from the newly-awarded renewable energy power contract, enabling Edwards to neutralize the brunt of California's energy crisis, stabilize base energy costs, and provide optimal mission support. The team was also recognized as an Air Force Best Practice.

The other four award winners were the F-15 Wing Shop Lean Depot Repair Team, Robins AFB, GA; the Combat Intelligence Center Battle Management System Team, 48th Operational Support Squadron, Royal Air Force Lakenheath, England; Global Positioning System User Equipment Diminishing Manufacturing Sources and Materiel Shortages Team, Navstar Global Positioning System Joint Program

Office, Robins AFB, GA; and the C-17 Electronic Testing and Evaluation of Student Training Team, 437th Logistics Group, Charleston AFB, SC.

A total of 21 teams were nominated for this year's award, which also serves as a means to share best practices and promote mission improvement and cost savings throughout the Air Force.

"I couldn't be more proud of the work and effort shown by the teams that are here today," General Jumper said during the ceremony. "There may be only five winners walking out with a trophy, but there are no losers in this crowd. In my eyes, all these teams are winners and are proud representatives of our Air Force." (Richard Salomon, Air Force Manpower and Innovation Agency Public Affairs)



# CE Energy, Water Managers Earn Federal Awards

The Air Force earned six 2002 Federal Energy and Water Management Awards for efforts toward saving energy, money and the environment. The U.S. Department of Energy's Federal Energy Management Program sponsors the annual awards, which recognize outstanding contributions toward energy efficiency, renewable energy and water conservation within the federal sector.

task force to complete a \$3 million Energy Savings Performance Contract (ESPC) that included \$375,000 in water conservation projects.

## Alternative Financing

Alternative Financing Awards to Organizations went to both the 42nd CES, Maxwell/Gunter AFB, AL, and the 7th CES, Dyess AFB, TX.

The 42nd CES energy team used ESPC as a financing mechanism to execute seven energy conservation projects totaling \$12.7 million in capital improvements that will result in first-year energy savings of about \$1.44 million.

The 7th CES Operations Flight implemented a \$5.4 million ESPC, reducing energy use by 8.7 percent and saving \$682,383 per year.



**The 7th CES used an Energy Savings Performance Contract to reduce energy use and earned an Alternative Financing Award.**

## Water Management

A Water Management Award to Small Groups went to 1Lt Tammy Gray, Keith Currie, Robin Mansfield, Ted Haviland and Michael Noret, 17th Civil Engineer Squadron, Goodfellow Air Force Base, TX.

Since October 1997, Goodfellow has decreased water consumption by 32 percent, saving the base more than \$176,000. The team partnered with the city's water conservation

The 434th Air Refueling Wing achieved a 56 percent reduction in energy use from fiscal year 2000 to 2001, and an overall reduction of 64 percent since fiscal year 1985. The savings resulted from an ESPC project involving installation of energy-efficient lighting and heating equipment.

## Energy Efficiency/Energy Management

David A. McPhee, Mari French, Jerry Kerns, Norman Tancrator and Chung Kim, 452nd Support Group, March AFB, CA, received an Energy Efficiency/Energy Management Award to Small Groups.

Among the team's accomplishments — a \$1.2 million demand side management (DSM) contract was implemented, reducing energy use by 9.5 percent and saving \$240,000 per year. A gas leak survey and repair of major leaks produced a 13.7 percent, or 5,855 million Btu per year, decrease in consumption, saving \$62,000 per year and eliminating potentially serious environmental and safety hazards.



**Water conservation projects earned a Water Management Award for Goodfellow AFB.**

## Innovative/New Technology Award to Individuals

An Innovative/New Technology Award to Individuals went to William B. Turner, 92nd CES, Fairchild AFB, WA.

As Fairchild's base energy manager, Mr. Turner oversaw design and construction of a \$2.1 million DSM energy saving project that involved installing light pipe technology and infrared radiant heating in an 11-acre building, saving almost 2.5 million kW hours of electricity and more than 26 billion Btu of natural gas annually, in addition to improving lighting levels. He also brought a \$15.2 million ESPC to the start of phase 3. The project replaces the central steam plant with distributed heating systems for 79 buildings, saving 236 billion Btu annually.

For more information on the FEMP awards program, contact Quinn Hart, Air Force Facility Energy Program Manager, HQ Air Force Civil Engineer Support Agency, DSN 523-6361 or commercial (850) 283-6361. *(Bill Autin, HQ Air Force Civil Engineer Support Agency, Tyndall AFB, FL)*

# Air Force <sup>2002</sup> Design Awards

The Air Force has announced the winners of its 2002 Design Awards Program. Sixteen awards were given this year to recognize projects that have achieved the Air Force goal of design excellence as it relates to the natural and built environment.

Three levels of awards are given: the Honor Award, Merit Award and Citation Award, the Honor Award being the highest of the three. There are no quotas as to the number of awards given, and there is no ranking of winners within any of the award levels. These awards mark the 27th year of the program, which is administered by the Air Force Center for Environmental Excellence at Brooks Air Force Base, TX.

## Honor

### Honor Award – Planning Studies and Design Guides

*General Plan*

Patrick AFB, FL

Base Engineer Organization: 45th CES

### Honor Award – Concept Design

*Mission Planning Center*

MacDill AFB, FL

Base Engineer Organization: 6th CES

## Merit

### Merit Award – Planning Studies and Design Guides

*Operation Snowbird Vision 2000 Area Development Plan*

Davis-Monthan AFB, AZ

Design Organization: 355th CES

### Merit Award – Facility Design

*Education Center and Library*

Fairchild AFB, WA

Base Engineer Organization: 92nd CES



### Merit Award – Concept Design

*Fitness Center*

McGuire AFB, NJ

Base Engineer Organization: 305th CES

*Medical Clinic Replacement and Dental Clinic Alteration*

Edwards AFB, CA

Base Engineer Organization: 95th CEG

### Merit Award – Interior Design

*Air Force Weather Heritage Center*

Offutt AFB, NE

Design Organization: 55th CES

*Armed Forces Recruiting Station*

Potomac Mills Mall, Prince William, VA

Design Organization: Omaha District U.S. Army Corps of Engineers



Artists' renderings of MacDill Air Force Base's Mission Planning Center and Patrick AFB's General Plan.





## Citation

### Citation Award – Planning Studies and Design Guides

*Architectural Compatibility Guide*

RAF Lakenheath, United Kingdom

Base Engineer Organization: 48th CES

### Citation Award – Concept Design

*Base Theater Renovation*

Vandenberg AFB, CA

Base Engineer Organization: 30th CES

*Dormitory/Mission Support Facility*

Eskisehir, Turkey

Base Engineer Organization: 39th CES

### Citation Award – Interior Design

*AMC Civil Engineering Suite Renovation*

Scott AFB, IL

Design Organization: AMC Design Center

Base Engineer Organization: 375th CES

### Citation Award – Landscape Design

*Fort Crook Historic Parade Ground*

Offutt AFB, NE

Design Organization: 55th CES

### Citation Award – Facility Design

*Radar Upgrade*

Clear Air Force Station, AK

Base Engineer Organization: 13th Space

Warning Squadron

*Cape San Blas Lighthouse Keeper's Quarters*

Eglin AFB, FL

Base Engineer Organization: 96th CEG

### Citation Award – Family Housing

*Vallenoncello Housing Units*

Aviano AB, Italy

Base Engineer Organization: 31st CES

## SMSgt Fraher Receives Sijan Award

An Air Force civil engineer received one of the highest leadership awards given by the Air Force Dec. 12

SMSgt Kevin Fraher, superintendent of operations, 2nd Civil Engineer Squadron, Barksdale Air Force Base, LA, received the Lance P. Sijan Leadership Award in the senior enlisted category.

"I can't imagine anything bigger than this," said Fraher. "Never in a gazillion years would I have thought I would even make it to the wing level."

Fraher, a career engineer, is a pavements and heavy equipment operator. He has been in the Air Force for 21 years and was recently selected for promotion to chief master sergeant.

"I take a lot of pride in being a civil engineer," he said. "Civil engineers make it happen even when they don't have everything they need to get the job done."

The Lance P. Sijan award was created in 1981 in honor of the first Air Force Academy graduate to receive the Medal of Honor. The award recognizes senior and junior officers and enlisted members assigned to organizations at the wing level or below who demonstrate outstanding leadership abilities.



Brig Gen (s) Floyd L. Carpenter, 2nd Bomb Wing Commander, presents the Lance P. Sijan Leadership Award to SMSgt Kevin Fraher.



# Civil Engineer Senior Officers and Civilians

## General Officers

HQ USAF	Maj Gen Robbins, Earnest O. II	Pentagon	The Civil Engineer
HQ AMC	Maj Gen Fox, L. Dean	Scott AFB	Director, Civil Engineering
HQ AFMC	Brig Gen Cannan, David M.	Wright-Patterson AFB	Command Civil Engineer
HQ AFCC	Brig Gen Burns, Patrick A.	Langley AFB	The Civil Engineer
ACC	Eulberg, Delwyn R. (sel)	Nellis AFB	Special Assistant to the Commander, Air Warfare Center

## Colonels

HQ AFCEE	Alston, Lavon	Brooks AFB	Executive Director
AETC	Amend, Joseph H. III	Wright-Patterson AFB	Vice Commandant, AFIT
ACC	Anderson, Benjamin	Hurlburt Field	Commander, 823 RHS
HQ ACC	Angel, Edward (AF Res)	Langley AFB	MA to The Civil Engineer
AETC	Astin, Jared A.	Wright-Patterson AFB	Dean, CE and Services School, AFIT
HQ AMC	Baldetti, Peter J.	Scott AFB	Chief, Planning and Programs Div.
HQ AFCESA	Barthold, Bruce R.	Tyndall AFB	Commander, AF Civil Engineer Support Agency
HQ CENTAF	Baughman, James D.	Shaw AFB	CENTAF A7 Civil Engineer
USSPACECOM	Bednar, Bryon J. (AF Res)	Peterson AFB	IMA to the Deputy Director of Operations (J3)
HQ AETC	Bird, David F. Jr.	Randolph AFB	The Civil Engineer
HQ ACC	Borges, Scott K.	Langley AFB	Chief, Base Support Division
HQ AMC	Bousquet, Roy V. (AF Res)	Scott AFB	ARC Advisor to the Director, Civil Engineering
HQ AFSPC	Brackett, James S.	Peterson AFB	Chief, Programs Division
ODUSD/I&E	Bradshaw, Joel C. III	Pentagon	Chief, Air Force Programs
USAF	Bratlien, Michael D. (AF Res)	USAF Academy	MA to the Superintendent
HQ CFC	Brendel, Lance C.	Yongsan Garrison	Deputy Assistant Chief of Staff, Engineer
HQ AETC	Brewer, David C. (sel)	Randolph AFB	Chief, Programs Division
HQ PACAF	Bridges, Timothy K.	Johnston Atoll	Commander, 15 MSG, Det 1
HQ AFCESA	Brittenham, Larry W.	Tyndall AFB	Director, Operations Support
PACAF	Byers, Timothy A.	Kunsan AB	Commander, 8 MSG
HQ AFSPC	Carmody, Cornelius J. "Connie"	Peterson AFB	The Civil Engineer
AETC	Carter, Theresa C.	Fort McNair	Student, Industrial College of the Armed Forces
ACC	Chisholm, Maryann H.	Minot AB	Commander, 5 MSG
AMC	Coker, Gregory W.	Pope AFB	Commander, 43 MSG
FLANG	Cook, Jere (ANG)	Camp Blanding	Commander, 202 RHS
HQ AFCESA	Cook, Michael J.	Tyndall AFB	Director, Technical Support
PACAF	Correll, Mark A.	Yokota AB	Commander, 374 MSG
HQ AMC	Corson, William M. (sel)	Scott AFB	Chief, Planning and Programs
ACC	Crummett, Thurlow E. "Terry"	Malmstrom AFB	Commander, 819 RHS
HQ PACAF	Cruz-Gonzalez, Carlos R. (sel)	Hickam AFB	Chief, Programs Division
HQ USAF	Daly, Patrick R. "Lou"	Pentagon	Chief, Environmental Division
HQ PACAF	DeFoliart, David W.	Hickam AFB	The PACAF Civil Engineer
ACC	Dinsmore, Raymond E.	Holloman AFB	Commander, 49 MSG
HQ PACAF	Drake, William J.	Hickam AFB	Deputy Civil Engineer
HQ USAF	Fadok, Faith H. (AF Res)	Pentagon	Mobilization Assistant to The Civil Engineer
PACAF	Falino, Michael	Elmendorf AFB	Deputy Commander, 611 ASG
HQ USAFE	Fetter, Clifford C.	Ramstein AB	Chief, Environmental Division
HQ AETC	Fink, Patrick T.	Randolph AFB	Chief, Environmental Division
PACAF	Fisher, Charles B.	Yokota AB	Fifth Air Force Civil Engineer
AFSPC	Fisher, Marvin N.	Peterson AFB	Commander, 21 MSG
HQ USAFE	Floyd, William R.	Ramstein AB	Deputy USAFE Civil Engineer
SAF/IEI	Formwalt, William A.	Pentagon	Director, Installation Policy
HQ PACAF	Fouser, John D.	Hickam AFB	Chief, Operations Division
PACAF	Fryer, Richard A. Jr.	Elmendorf AFB	Commander, 3 CES
HQ AMC	Gaffney, Timothy P.	Scott AFB	Chief, Operations Division
HQ AETC	Green, Gordon S.	Randolph AFB	Chief, Operations Division
HQ USAF	Greenough, William T.	Pentagon	Chief, Programs Division
HQ AMC	Griffin, Bobbie L. Jr.	Scott AFB	Chief, Environmental Programs Div.
OSD/RA	Hart, Thomas H. (AF Res)	Pentagon	Deputy Director, Environmental Mgmt.
USAF	Hayden, Thomas F. III	USAF Academy	The Civil Engineer/Commander, 10 CES
AFRC	Haythorn, Thomas B. (AF Res)	Dobbins ARB	Commander, 628 CEF
HQ ACC	Hicks, Otis L. Jr.	Langley AFB	Chief, Readiness Division
PACAF	Hoarn, Steven E.	Hickam AFB	Commander, 15 CES
MO ANG	Hobbs, C. Ron (ANG)	Lambert IAP	Commander, 231 CEF
HQ USAF	Holland, James P.	Pentagon	Chief, Housing Division
AMC	Howe, David C.	McGuire AFB	Commander, 305 MSG
PACAF	Howell, Richard C.	Misawa AB	Commander, 35 MSG
HQ AFSPC	Janiec, Gordon R.	Peterson AFB	Deputy Civil Engineer
ACC	Jeter, Drew D.	Langley AFB	Commander, 1 MSG
HQ AFCESA	Johnson, Wilson III (AF Res)(sel)	Tyndall AFB	IMA to Director, Operations Support
HQ USAF	Kanno, Neil K.	Pentagon	Chief, Readiness & Installation Support Div.
AMC	Keith, Edmond B.	Andrews AFB	Commander, 89 MSG
SAF/IEI	Kohlhaas, Karen D. (AF Res)	Pentagon	MA to the Assistant Secretary of the Air Force, Installations
PACAF	Kopp, Robert D.	Osan AB	Commander, 51 MSG



HQ AFCEE	Korslund, Per A.	Brooks AFB	Director, Environmental Restoration
HQ AFCEE	Krnavek, Ronald (AF Res)	Brooks AFB	IMA to the Director
ACC	Kuhlmann, Bryan L.	Shaw AFB	Commander, 20 MSG
HQ AFCESA	Kuhns, James E. (AF Res)	Tyndall AFB	IMA to the Commander
HQ AMC	Lally, Brian J. (AF Res)	Scott AFB	IMA to the Director, Civil Engineering
HQ AETC	Lancaster, Louis K.	Randolph AFB	Chief of Engineering Division
OSD	Lee, Irvin B.	AFELM JCS	Joint Staff Engineer Officer
HQ AFRC	Lemoi, Wayne T. (AF Res)	Robins AFB	Chief, Readiness Division
USAFE	Leprone, Jeffrey L.	Ramstein AB	Commander, 86 CEG
MD ANG	Lew, Alan E. (ANG)	Martin State Airport	Commander, 235 CEF
ACC	Lifschitz, Gabriel (AF Res)(sel)	Holloman AFB	IMA to 49 CES Commander
PACAF	Lillemon, Steven K.	Kadena AB	Commander, 18 CEG
HQ AFMC	Loomis, Paula J. (AF Res)	Wright-Patterson AFB	IMA to the Command Civil Engineer
HQ PACAF	Lyon, James D.	Hickam AFB	Chief, Operations Division
AFRC	Mack, Francis	Scott AFB	Commander, 932 SPTG
AFMC	Macon, William P.	Eglin AFB	Commander, 96 CEG
AFELM DIA	McClellan, Richard G.	Bucharest, Romania	Air Attaché Romania
ACC	McElhannon, Neal B.	Langley AFB	Commander, 1 CEG
PACAF	Medeiros, John S.	Hickam AFB	Commander, 15 MSG
HQ AMC	Miller, Brian L.	Scott AFB	Deputy Director, Civil Engineering
ACC	Minto, Paul E.	Nellis AFB	Commander, 820 RHS
HQ AFSOC	Parker, Richard P.	Hurlburt Field	The AFSOC Civil Engineer
AMC	Patrick, Leonard A.	Travis AFB	Commander, 60 MSG
AFMC	Peters, David T.	Hanscom AFB	Commander, 66 MSG
SAF/IEI	Pokora, Edward J.	Pentagon	Director for Facility Management
AFMC	Purvis, Quincy D.	Arnold AFB	Director of Support
HQ AFMC	Quinn, William R.	Wright-Patterson AFB	Chief, Engineering Division
11 Wing	Richardson, Cardell K.	Bolling AFB	SA to the Dir., Armed Forces Ret. Home-WA
AETC	Rojko, Paul M.	Cambridge MA	Director of Civil Engineering, AFROTC Northeast
AFMC	Romano, Sebastian V.	Hill AFB	Commander, 75 ABW
HQ ACC	Rumsey, Kevin E. (sel)	Langley AFB	Chief, Programs Division
AFRC	Russell, John P. Jr. (AF Res)	Kelly AFB	Commander, 307 RHS
HQ ACC	Ryburn, James T. "Tom"	Langley AFB	Deputy Command Civil Engineer
AFMC	Sanchez, Mark A. (AF Res)(sel)	Eglin AFB	IMA to 96 CES Commander
HQ AMC	Saroni, Vincent M. (AF Res)(sel)	Scott AFB	IMA to Operations Division chief
HQ AFMC	Saunders, William R.	Wright-Patterson AFB	Chief, E-Business Project Management
PACAF	Schluckebier, Thomas J.	Osan AB	Seventh Air Force Civil Engineer
HQ USAF	Scrafford, Andrew R.	Pentagon	Chief, Engineering Division
HQ USAF	Seitchev, Glenn D. (AF Res)(sel)	Pentagon	IMA to Housing Division chief
OSD	Selstrom, John P. Jr.	Pentagon	Special Assistant for UXO Matters
HQ ACC	Shelton, Kenneth P.	Langley AFB	Chief, Operations & Infrastructure Division
ACC	Showers, Duncan H. "Scott"	Cannon AFB	Commander, 27 MSG
AMC	Smiley, Charles P.	Dover AFB	Commander, 436 MSG
ACC	Smith, Keith E.	Nellis AFB	Commander, 99 CES
11 Wing	Snyder, Cynthia G.	Bolling AFB	Commander, 11 CES
AFMC	Snyder, Neil K. (AF Res)(sel)	Hill AFB	IMA to 75 CEG Commander
HQ PACAF	Sohotra, Joyce F.	Hickam AFB	Chief, Environmental Division
AFMC	Somers, Paul W.	Hill AFB	Commander, 75 CEG
HQ USAFE	Speake, Nancy L.	Ramstein AB	Chief, Programs Division
CO ANG	Sprenkle, Dave (ANG)	Buckley AFB	Commander, 240 CEF
AFMC	Stanley, Tad A.	Robins AFB	Vice Commander, 78 ABW
HQ ANG	Strandell, William J. (ANG)	Andrews AFB	Deputy Civil Engineer
HQ ANG	Stritzinger, Janice M. (ANG)	Andrews AFB	The ANG Civil Engineer
HQ AFCEE	Strom, Randie A.	Brooks AFB	Director, Environmental Conservation & Planning
HQ AFRC	Sweat, David A.	Robins AFB	The Civil Engineer
HQ USAFE/XP	Thady, Randall J.	Ramstein AB	Chief, Forces, Programs and Bases Div.
HQ AFMC	Thorpe, York D.	Wright-Patterson AFB	Chief, Programs and Operations Division
ACC	Tinsley, Hal M.	Holloman AFB	Commander, 49 MMG
AFMC	Torchia, Linden J.	Robins AFB	Commander, 78 CEG
AFSPC	Tucker, Douglas K.	Vandenberg AFB	Commander, 30 CES
SAF/IEI	Vazquez, Luis A. (AF Res)	Pentagon	Assistant for Reserve Affairs
HQ USAFE	Verlinde, Jon D.	Ramstein AB	The USAFE Civil Engineer
HQ AFMC	Wallington, Cary R.	Wright-Patterson AFB	Deputy, Installations and Support
PACAF	West, James D. (AF Res)(sel)	Osan AB	IMA to the Seventh AF Civil Engineer
AFRC	West, Robert G. (AF Res)	NAS/JRB TX	301 FW Office of the Inspector General
HQ USAF	Whalen, Daniel P. (AF Res)	Pentagon	IMA to Readiness and Installation Support Division Chief
AETC	White, Arvil E. III "Bobby"	Sheppard AFB	Commander, 782 Training Group
AFMC	White, Robert L. (AF Res)(sel)	Robins AFB	IMA to 78 CEG Commander
AFRC	Wilcox, Vincent S. (AF Res)(sel)	NAS JRB Ft. Worth	Vice Commander, 301 MSG
OASD	Willert, Carl R. (ANG)	Pentagon	Deputy Director, Construction
HQ USAF	Wilson, Robert C. (AF Res)(sel)	Pentagon	IMA to Programs Division chief
SAF/IEE	Wolf, Lewis F. (ANG)	Pentagon ANG	ANG Advisor to SAF/IEE

HQ AFCESA Worrell, Josuelito  
 HQ USAF Wright, Mark D.  
 ACC Zander, Steven W.  
 HQ AFSPC Zelenok, David S. (AF Res)

Tyndall AFB  
 Pentagon  
 Seymour Johnson AFB  
 Schriever AFB

Director, Contingency Support  
 Chief, Programs & Analysis Branch  
 Commander, 4 MSG  
 IMA to 50 Space Wing Commander

## Senior Executive Service

HQ USAF Aimone, Michael A.  
 HQ AFCEE Erickson, Gary M.  
 HQ USAF Ferguson, Kathleen I.  
 AFRPA Lowas, Albert F. Jr.  
 HQ AFMC Pennino, James R.  
 AFMC Stephens, Eric L.

Pentagon  
 Brooks AFB  
 Pentagon  
 Arlington VA  
 Wright-Patterson AFB  
 Brooks AFB

Deputy Director of Logistics Readiness  
 Director, Air Force Center for Environmental Excellence  
 The Deputy Civil Engineer  
 Director, Air Force Real Property Agency  
 Deputy Command Civil Engineer  
 Director, AF Inst. for Env., Safety and Occupational Health Risk Analysis

## GS/GM-15s

HQ AFCESA Anderson, Myron C.  
 AFRPA Antwine, Adam  
 HQ AFCEE Bakunas, Edward J.  
 HQ ACC Barrett, Robert C. III  
 AFRPA Beda, Carol Ann  
 HQ AFMC Bek, David J.  
 USSOCOM Bosse, Harold  
 HQ AFSPC Bratlien, Michael D.  
 AFRPA Brunner, Paul G.  
 HQ AFCEE Campbell, Darrell  
 HQ AMC Carron, Norman  
 AFMC Clark, Michael J.  
 HQ ANG Conte, Ralph  
 AFRPA Corradetti, John J. Jr.  
 AFMC Coyle, Stephen  
 HQ AFRC Culpepper, Hilton F.  
 CCDP Daugherty, Patrick C.  
 HQ AFCESA Day, Alvin L.  
 HQ USFK Einwaechter, James R.  
 HQ ACC Firman, Dennis M.  
 AFRPA Frank, Joyce K.  
 HQ USAF Franklin, George H. Jr.  
 AFMC Gray, William G.  
 HQ USAF Halvorson, Kathryn M.  
 AFMC Harstad, Richard D.  
 AFMC James, W. Robert  
 AFRPA Jenkins, Richard  
 AFMC Johnson, Gary K.  
 AFRPA Kempster, Thomas B.  
 HQ AFCESA Lally, Brian J.  
 HQ AFCEE Leighton, Bruce R.  
 AFMC Lester, Ronald J.  
 HQ AFSPC Maher, Gary  
 HQ USAF Maldonado, Rita  
 AFMC McBride, Michael  
 HQ USAF Moore, Robert M.  
 HQ AFMC Munday, Karl J.  
 HQ AETC Parker, Paul A.  
 DLAMP Pohlman, Teresa  
 AFMC Polce, Ronald L.  
 HQ AMC Potter, Perry D.  
 AFMC Preacher, Vicki  
 AFRPA Reinertson, Kenneth  
 HQ AFCEE Ritenour, Donald L.  
 HQ AFCEE Russell, Thomas C.  
 HQ AFMC Sculimbrene, Anthony F.  
 HQ USAFE Shebaro, Bassim D.  
 AFCEE Sims, Thomas D.  
 AFMC Sirmans, James D.  
 SAF/IEI Smith, John Edward B.  
 HQ USAFE Thompson, John D.  
 AFMC Tuss, Margarita Q.  
 HQ ANG VanGasbeck, David C.  
 HQ ANG Whitt, William B.  
 AFMC Wood, Robert W.  
 HQ PACAF Yasumoto, Stanley Y.  
 SAF/IEE Yonkers, Terry A.

Tyndall AFB  
 Kelly AFB  
 Brooks AFB  
 Langley AFB  
 Arlington, VA  
 Wright-Patterson AFB  
 MacDill AFB  
 Peterson AFB  
 McClellan AFB  
 Brooks AFB  
 Scott AFB  
 Eglin AFB  
 Andrews AFB  
 Arlington VA  
 Robins AFB  
 Robins AFB  
 Mons, Belgium  
 Tyndall AFB  
 Yongsan Garrison  
 Langley AFB  
 Arlington VA  
 Pentagon  
 Arnold AFB  
 Pentagon  
 Wright-Patterson AFB  
 Hill AFB  
 Arlington, VA  
 Wright-Patterson AFB  
 McClellan AFB  
 Tyndall AFB  
 Brooks AFB  
 Wright-Patterson AFB  
 Peterson AFB  
 Pentagon  
 Hill AFB  
 Pentagon  
 Wright-Patterson AFB  
 Randolph AFB  
 Pentagon  
 Arnold AFB  
 Scott AFB  
 Tinker AFB  
 Arlington, VA  
 Brooks AFB  
 Brooks AFB  
 Wright-Patterson AFB  
 Ramstein AB  
 Atlanta, GA  
 Eglin AFB  
 Pentagon  
 Ramstein AB  
 Wright-Patterson AFB  
 Andrews AFB  
 Andrews AFB  
 Edwards AFB  
 Hickam AFB  
 Pentagon

Chief, Civil and Pavements Division  
 Senior Representative  
 Chief, Program Support Division  
 Chief, Environmental Division  
 Chief, Environmental Division  
 Director, Programs Division  
 Command Civil Engineer  
 Chief, Environmental Division  
 Director, Environmental Management  
 Chief, Design Group Division  
 Chief, Engineering Division  
 Deputy Base Civil Engineer  
 Chief, Programming Division  
 Program Manager, Division A  
 Director, Environmental Management  
 Assistant Civil Engineer  
 Senior Staff Engineer, HQ SHAPE  
 Chief, Mechanical/Electrical Engineering Division  
 Deputy Assistant Chief of Staff, Engineer  
 Chief, Engineering Division  
 Deputy Director, AF Real Property Agency  
 Chief, Program Management Branch, Housing Div.  
 Technical Director  
 Deputy Chief, Housing Division  
 Chief, Acquisition ESH Division  
 Director, Environmental Management  
 Chief, Real Estate Division  
 Director, Civil Engineer Directorate, 88 ABW  
 Senior Representative  
 Executive Director  
 Technical Assistant, Environmental Conservation and Planning  
 Director, Environmental Management, 88 ABW  
 Chief, Engineering Division  
 Chief, Resources Division  
 Chief, Materiel Management Division  
 Chief, Program Management Branch, Engineering Div.  
 Chief, Environmental Division  
 Deputy Command Civil Engineer  
 Program Manager, Pentagon Renovation Office  
 Technical Director for Facilities  
 Chief, Housing Division  
 Director, Environmental Management  
 Program Manager, Division D  
 Director, Design and Construction  
 Technical Assistant, Environmental Restoration  
 Exec. Director, Dayton Aviation Heritage Commission  
 Chief, Engineering Division  
 Director, Eastern Region Environmental Office  
 Director, Environmental Management  
 Deputy to the Deputy Assistant Secretary  
 Program Manager, Rhein Main Transition PMO  
 Chief, Engineering Division, 88 ABW  
 Chief, Environmental Division  
 Chief, Engineering Division  
 Director, Environmental Management  
 Chief, Engineering Division  
 Deputy to the Deputy Assistant Secretary





# 48th Civil Engineer Squadron

**Unique Requirements:** The 48th CES is a 497-person squadron supporting USAF's only lead AEF wing and three F-15 squadrons. The "Liberty Engineers" provide maintenance, repair, construction, fire protection, housing, disaster preparedness, explosive ordnance disposal and environmental protection for 20 squadrons and 14 tenants with 15,000 people, 705 facilities, 2,500 housing units, a regional hospital/AAFES/Commissary, and five DoD Dependent Schools. Facilities and infrastructure are valued at \$13.6 billion.

**Recent Accomplishments:** The 48th CES forward deployed 58 engineers to a classified location in Pakistan in support of Operation ENDURING FREEDOM for reconnaissance, Combat Search and Rescue, and airlift missions. The 48th CES team was the third civil engineer unit to deploy to the austere site, where they focused on sustainment operations for a 2,000-person, 224-tent Harvest Falcon tent city. No service contract support was available, but the Liberty Engineers were prepared to do it all from trash and sewage hauling to Maytag repair. Priority was given to enhancing infrastructure by installing water distribution loops and expanding the base power grid. Force protection projects also kept the deployed engineers busy by placing HESCO barriers, digging trenches and building berms. The Liberty Engineers also provided a great deal of host nation support to include constructing temporary roads, supplying potable water, and building a mosque floor. Upon arrival, two projects were on the books, but requirements quickly grew to 10 projects valued at over \$7 million. A highlight during the deployment was the one-year anniversary of the Sept. 11 attacks. 48th CES personnel took the lead on constructing a memorial to the victims of the attacks, enhancing pride and morale of all deployed personnel serving our country in the war on terrorism.

Liberty Engineers on the homefront maintained RAF Lakenheath's operational efficiency throughout the year. Use of a pioneering concrete formwork while constructing a Consolidated Support Center garnered rave reviews in *Concrete Magazine*. The squadron also completed 139 work orders for the 48th Services Squadron in support of a LeMay Inspection, resulting in RAF Lakenheath's Services programs receiving the top USAF award and 2nd Air Force-wide. The 48th CES took the lead in recent USAF/IG and NATO surety inspections by receiving three of the 14 "Excellent" ratings within the 48th Fighter Wing.

**Recent Awards:** USAF 2002 Design Awards included an Interior Design Honor Award for the recently completed Child Development Center, and Planning, Studies and Design Guides Honor Award for our Phase III Housing Development Study. USAF's civilian and military Firefighters of the Year are members of the 48th CES. The unit also received Commander in Chief's Special Recognition for Installation Excellence for its recycling program and anti-terrorism/force protection program.

## Parent Unit:

48th Support Group, 48th  
Fighter Wing (United States Air  
Forces Europe)

## Location:

Royal Air Force Lakenheath,  
United Kingdom

## Commander:

Lt Col Thomas D. Quasney

## Assigned Personnel:

253  
military, 20 GS civilians, and 224  
Ministry of Defence civilians

## Mission:

Provide, maintain and protect  
an operational platform to  
sustain combat air power at  
home and deployed.

# Unit Spotlight





# The American Spirit

U.S. Air Force Academy civil engineer cadets' welded junkyard creations incorporate both artistic creativity and technical craftsmanship. Welding techniques are taught at the Academy's Field Engineering Readiness Laboratory.

Photography by USAFA graphic artist Al Fleetwood in remembrance of those lost Sept. 11, 2001. "Let us never forget the American spirit continues to shine now and forevermore."